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M DCC LXIX.

A

TABLE

OF THE

CONTENTS.

OF Foundations, Proportions, &c. in Letter-Preſs — Page 1, 2, 3, 4
Bricklayer's Work — * 1
  Tiling — ibid.
  Pantiling — * 2
  Paving — ibid.
Carpenter's Work — ibid.
  Boarded Partitions — ibid.
  Boarded Floors — * 3
  Barn Floors — ibid.
  Squares and Coolers for Brewing ibid.
  Weather Boarding — ibid.
  Stair-caſes — ibid.
  Cornices to the Eaves of Houſes * 4
  Frontiſpieces — ibid.
  Pale Fencing — ibid.
Joiner's Work — ibid.
Plaiſterer's Work — * 6
Maſon's Work — ibid.
Glazier's Work — * 7
Plumber's Work — ibid.
Painter's Work — ibid.
Blackſmith's Work — ibid.
Eſtimate of building a new Houſe * 8
Of the Diminiſhing of Walls — 5
Timber Scantlings — 6
Of Geometrical Figures — 7, 8
Groins and Angle Brackets — 9, 10
Brick and Stone Arches — 11, 12
Circular Soffits — 13
Niches and Vaneering them — 14, 15
Piers for Gates — 16
Vaſes, Stone-Tables, and Fonts — 17
Pedeſtals for Sun-Dials and Buſts — 18
Of framing principal Rafters, Floors, Partitions, and truſſing Girders — 19
The Lengths and Backing of Hips — 20
Backing Curve-line Hips — 21
Truſs-Roofs and Domes — 22
Plans for Stairs, &c. — 23
Elevation for Stairs — 24
Moulding for Bracket-Stairs — 25
Elevation for ditto — 26
Plan and Scroll for a Twiſt Rail — 27
Ditto at large — 28
Two Flights of Pedeſtal-Stairs — 29
Mouldings at large for ditto — 30
Centers for Mouldings — 31
Intercolumnations — 32
New-invented Rule — 33
Tuſcan Order — 34
Mouldings for ditto — 35
Doric Order — 36
Mouldings for ditto — 37
Ionic Order — 38
Mouldings for the Ionic Order — 39
Corinthian Order — 40
Mouldings for ditto — 41
Compoſite Order — 42
Mouldings for ditto — 43
Capitals — 44
Gauging of Columns — 45
Planceers — 46
Impoſt — 47
Pediments, &c. — 48
Proportion of Doors — 49
Architrave, Friſe, and Cornice — 50
Ditto, at large — 51
Ditto, for Windows — 52
Moulding for the Pedeſtal Part of Rooms 53
Ditto, at large — 54
Cornice and Margents — 55
Ditto, at large — 56
Ditto — 57
Doric Cornice — 58
Ditto, Entablature — 59
Ditto, Corinthian — 60
Chimney-pieces — 61
Ditto — 62
Frets, &c. — 63
Mouldings at large — 64
Ditto — 65
Ditto — 66
Ditto — 67
Ditto — 68
Pulpits, &c. — 69
Supporters to ditto — 70
Ionic Altar-piece — 71
Five Gothic Columns — 72
Gothic Entablature — 73
Moulding, &c. to ditto — 74
Entablature, &c. &c. to ditto — 75
Ditto, at large — 76
Ditto of Seven Arches — 77
Ditto, at large — 78
Ditto, Baſe, Cap, &c. — 79
Gothic Frontiſpieces — 80
Ditto — 81
Ditto, for Inſide Work — 82
Ditto, Cornice — 83
Ditto, Windows — 84
Ditto, Chimneys — 85
Plans and Elevations of Gentlemens Houſes 86
Octagon Temple — 87
Ditto, Hot-Houſe — 88
Ditto, Green-Houſe, Garden-Seats, &c. 89
Ditto, and a Truſs-Bridge — 90
Ditto, Gothic Temple, &c. — 91
Ditto, Venetian Seats, &c. — 92

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Concerning FOUNDATIONS.

THE Foundation is properly called the Baſis of the Building, and is that Part under Ground which ſuſtains the Whole; and therefore of all the Errors that can be committed in Building, thoſe made in the Foundation are moſt pernicious, becauſe they at once occaſion the Ruin of the whole Structure; nor can it be rectified without the utmoſt Difficulty; for which Reaſon the Architect or Workman ſhould apply his utmoſt Diligence in this Point; for though in ſome Places there are natural Foundations, yet in others Art is required.

Natural Foundations are when we build on a chalky Soil, or on a Rock, of which there are many Kinds, ſome harder than others; and theſe without digging, or any other Aſſiſtance from Art, are of themſelves very ſtrong and ſufficient Foundations, capable to ſuſtain any Building, either on Land or in Water; but when Nature does not furniſh Foundations, Art muſt be uſed, becauſe the Places to build on are either ſolid Ground, Gravel, Sand, a moiſt or marſhy Soil. Where it is ſolid, the Foundation need be no deeper than the Quality of the Building and the Solidity of the Ground ſhall require, as the Architect or Workman ſhall think proper, and need not exceed the Sixth Part of the Height of the whole Building, if there are no Cellars under Ground; but if Cellars, it muſt be ſomething deeper.

Foundations ought to be twice as thick as the Wall to be built on them, and Regard in this ſhould be had to the Quality of the Ground and the Largeneſs of the Building, making them greater in ſoft Soils, and very ſolid where they are to ſuſtain a conſiderable Weight; when the Ground is ſoft and ſinks very much, as in Bogs, then it muſt be well piled and planked, and drive the Piles till they come to a Solid; the Foundations muſt be made ſloping, that is, diminiſhed in Proportion as they riſe, but in ſuch a Manner, that there may be juſt as much ſet off on one Side as on the other, that the Middle of the Wall above may fall plumb upon the Middle of the Wall below, which alſo muſt be obſerved in the ſetting off the Wall above Ground, becauſe the Buildings by this Method are made much ſtronger than if the Diminutions were done any other Way.

It ought to be obſerved, that Walls ſhould diminiſh in Proportion as they riſe, therefore thoſe which appear above Ground muſt be but half as thick as the Walls in the Foundations, thoſe of the ſecond Story half a Brick thinner than the Walls of the firſt, and in this Manner to the Top of the Building; but with Diſcretion, that the upper Part be not too thin, the Middle of the upper Walls ought to fall directly upon the Middle of the lower, which will give the whole Wall a pyramidal Form; but when you are willing to make the Superficies, or Face of the upper Walls to fall directly on the Face of the lower, it muſt be done towards the Inſide of the Building, for the Floors, Beams, and other Supports of the Building will keep them from giving way; but when the diſcharged Part, or Set-off, is on the Outſide, it may be covered with a Faſcia and Cornice, which going round all the Building, will be both an Ornament and Bond to the Whole; and becauſe the Angles partake of the Two Sides, in order to keep them upright and united together, they ought to be made very ſtrong and ſolid, the Windows and other Openings as far diſtant from the Angles as poſſible, or at leaſt ſo much Space left between the Aperture and the Angles, as the Width of the Opening.

It is a general Rule in Buildings, to diminiſh the Stories in their Height one ſixth Part; that is, the ſecond Story to be a ſixth Part leſs in Height than the firſt, and the third Story a ſixth Part leſs in Height than the ſecond; and the Height of Windows to diminiſh in the ſame Proportion; that is, the Windows in the firſt Story to be two Diameters one ſixth; in the ſecond Story two Diameters; in the third Story a ſixth Part leſs than two Diameters; and ſometimes the Windows in Attic Stories, the Height is equal to the Breadth.

The Proportion of Windows for Light to Rooms; multiply the Length of the Room by the Breadth, and multiply the Height by the Product of the Length and Breadth, and out of that Product extract the Square Root, which is the Light required.

For Example, ſuppoſe a Room to be 12 Feet by 16 on the Plan, and the Height to be 12 Feet, the Square Root is 48 Feet, which may be divided into two Parts, or Windows, and each will contain 24 Feet ſuperficial, that will be a proper Light for the Room, and not glare too much, nor be too dark. This Light will be agreeable to the Proportion of Rooms of the following Denominations: the Length of the Rooms not to exceed two thirds of the Breadth, that is, 12 Feet by 20, or 18 by 30, or 24 by 40 Feet, and ſo on; or ſuppoſe the Plans to be 9 Feet by 12: or 12 by 16, or 16 by 20, or 20 by 25 Feet; or ſuppoſe 12 Feet by 18, or 18 by 27, or 24 by 36; or ſuppoſe 16 by 24, or 20 by 30, or 30 by 40 Feet, and ſo on; but the Height of the Rooms from the Floor to the Cieling is not to exceed 20 Feet in any of theſe Rooms; but ſometimes Rooms are ſquare on the Plan from 10 Feet to 40 Feet ſquare, or more.

```
      16
      12
      ——
      32
     16
     ———
     192 the Product of 12 by 16.
      12 Height.
     ———
     384
    192
    ————
    2304(48
    16
    ——
 88)704
    704
    ———
    000
```

Firſt, To extract the Square Root, obſerve the following Directions; firſt, you muſt point your given Number; that is, make a Point or Prick over the Units Place, another upon the Hundreds, and ſo upon every ſecond Figure throughout.

Secondly, Then ſeek the greateſt Square Number in the firſt Point towards the Left Hand, place the Square Number under the firſt Point, and the Root thereof in in the Quotient, and ſubtract the ſaid Square Number from the firſt Point, and to the Remainder bring down the next Point, and call that the Reſolvend.

Thirdly, Then double the Quotient, and place it for a Diviſor on the Left Hand of the Reſolvend, and ſeek how often the Diviſor is contained in the Reſolvend, reſerving always the Units Place, and put the Anſwer in the Quotient, and alſo on the Right Hand Side of the Diviſor, then multiply by the Figure laſt put in the Quotient, and ſubtract the Product from the Reſolvend, as in common Diviſion, and bring down the next Point to the Remainder, if there be any more, and proceed as before.

As to the Cielings, they are ſometimes flat, and ſome coved; when coved, the Height of the Cove is one fourth Part, or one fifth Part of the Height of the Room.

For Example, ſuppoſe the Room to be 20 Feet high, the Cove to be one Fourth, equal to five Feet; or, ſuppoſe the Room to be 15 Feet high, the Height of the Cove to be one Fifth, equal to three Feet; but ſometimes Cielings are domeacal in large Halls, and have a Cupola on the Top to give Light to the upper Part of the Room.

One more Example; ſuppoſe a Room to be 18 Feet by 30, and 15 Feet in Height, the Square Root is 90 Feet, which may be divided into four Parts or Windows, then each Window will contain 22 Feet and $\frac{1}{2}$ ſuperficial, the Width of each Window will be 3 Feet 4 Inches, and the Height will be 6 Feet 10 Inches.

```
       30
       18
       ——
      240
      30
    ————
      540
       15
    ——————
    2700
    540
    ——————
    8100(90
    81
    ——————
180)0000
```

The Proportion of the Openings of Chimnies for Rooms, Halls, or Kitchens, from ſix Feet ſquare to Sixty.

BY this Rule, ſuppoſe a Room of ſix Feet ſquare, the Opening to be two Feet wide, and two Feet nine Inches in Height, as by the following Table; that is, to every Foot add one Inch and a Half to the Width of the Chimney, and Half an Inch to the Height of the Opening to the Chimney, and for the Depth of the Chimney, from the Face to the Back, add the Width and Height together, and take one Fourth for the Depth; then for the Bigneſs of the Funnel to clear the Smoke, take three Fourths of the Depths of the Chimney, for the Side of the Square of the Funnel; the reſt will be eaſy to comprehend, if you conſider, that from ſix Feet to ſixty Feet the Squares of the Rooms, that to every Foot in the Bigneſs of the Room it adds one Inch and Half to the Width of the Chimney, and Half an Inch to the Height.

As

As theſe Tables are calculated for ſquare Rooms, it will be proper to ſhew how they may be applied to Rooms that are longer than broad; by this Rule, add the Length and Breadth together, and take the Half of that Sum for the Square of the Room. Suppoſe a Room be 24 Feet long, and 16 broad, which added will be 40 Feet, the Half of which is 20 Feet, the Square of the Room; then a Chimney for a 20 Feet Room will do for a Room 24 by 16, and ſo for any other. Suppoſe a Room ſo large that two Chimnies ſhould be thought more convenient than one, it will be then proper to divide the Length of the Room in two, and then by the whole Width and Half the Length you may find a mean Proportion.

For Example, a Room 60 Feet long, and 36 broad, Half the Length is 30 Feet, added to 36 the Width, the Sum is 66; the Half is 33; ſo that two Chimnies, of the Proportion of a 33 Feet Room, will be ſufficient for a Room of 60 by 36, and ſo for any other in like Proportions.

The Square of the Room in Feet.	The Width of the Opening of the Chimnies.		The Height of the Opening of the Chimnies.		Depth of the Chimnies from the Face of the Jambs to the Back.		Side of the Square to the Funnel of the Chimney.	
Square Feet.	Width.		Height.		Depth.		Funnel.	
6	2	0	2	9	1	2¼	0	10¾
7	2	1½	2	9½	1	2¾	0	11¼
8	2	3	2	10	1	3¼	0	11½
9	2	4½	2	10½	1	3¾	1	0
10	2	6	2	11	1	4¼	1	0¼
11	2	7½	2	11½	1	4¾	1	0½
12	2	9	3	0	1	5¼	1	1
13	2	10½	3	0½	1	5¾	1	1¼
14	3	0	3	1	1	6¼	1	1½
15	3	1½	3	1½	1	6¾	1	1¾
16	3	3	3	2	1	7¼	1	2
17	3	4½	3	2½	1	7¾	1	2½
18	3	6	3	4	1	8½	1	3⅛
19	3	7½	3	4½	1	9	1	3¾
20	3	9	3	6	1	9¾	1	4
21	3	10½	3	6½	1	10¼	1	4½
22	4	0	3	7	1	10¾	1	4¾
23	4	1½	3	7½	1	11¼	1	5
24	4	3	3	8	1	11¾	1	5½
25	4	4½	3	8½	2	0¼	1	6
26	4	6	3	9	2	0¾	1	6½
27	4	7½	3	9½	2	1¼	1	6¾
28	4	9	3	10	2	1¾	1	7
29	4	10½	3	10½	2	2¼	1	7½
30	5	0	3	11	2	2¾	1	7¾
33	5	4½	4	0½	2	4¼	1	9
36	5	9	4	2	2	5¾	1	10¾
39	6	1½	4	3½	2	7¼	1	11¼
42	7	0	4	5	2	10¼	2	1½
45	7	4½	4	6½	2	11¾	2	3
48	7	9	4	8	3	1¼	2	3¾
51	8	1½	4	9½	3	2¾	2	5
54	8	6	4	11	3	4¼	2	6
57	8	10½	5	0½	3	5¾	2	6¾
60	9	3	5	2	3	7¼	2	7¼

Price of BRICKLAYERS *Work.*

BRICK Walls are from 6l. to 6l. 10s. per Rod, of which the Workmanſhip is from 20s. to 28s. per Rod.

Brick Fronts, excluding Arches, Facios, and Cornices, are from 7l. to 8l. or 9l. per Rod; Workmanſhip from 24s. to 28s. per Rod. One Rod, at the Standard Thickneſs, will require 4500 Bricks, 32 Buſhels of Lime, and 2 Loads and Half of Sand. The Value of a Rod of Brick Work may be found as under, at the Statute Thickneſs of One Brick and Half, allowing 1l. 2s. for Morter, 16s. per Thouſand for Bricks, 2s. 4d. per Day for a Bricklayer, and 1s. 4d. per Day for a Labourer.

Note, A Trowelman and Labourer will perform one Rod of rough Brick-work in five Days; but the Price of Labour and Materials varying, I here ſubjoin the low, middling, and higheſt Eſtimate; *viz.*

	l.	*s.*	*d.*
Firſt, 5 Days, a Bricklayer, at 2s. 4d. per Day	0	11	8
5 Days, a Labourer, at 1s. 4d. per Day	0	6	8
4500 Bricks, at 16s. per Thouſand	3	12	0
Morter	1	2	0
Total £.	5	12	4

	l.	*s.*	*d.*
Secondly, 5 Days a Bricklayer, at 2s. 6d. per Day	0	12	6
5 Days, a Labourer, at 1s. 4d. per Day	0	6	8
4500 Bricks, at 18s. per Thouſand	4	1	0
Morter	1	2	0
Total £.	6	2	2

	l.	*s.*	*d.*
Thirdly, 4500 Bricks, at 20s. per Thouſand	4	10	0
32 Buſhels of Lime, at 6d. per Buſhel	0	16	0
2 Loads and Half of Sand, at 3s. per Load	0	7	6
6 Days, a Bricklayer, at 3s. per Day	0	18	0
6 Days a Labourer, at 1s. 6d. per Day	0	9	0
Total £.	7	0	6

Note, The Carriage of all Materials muſt be added to the above Eſtimates.

Rubbed Arches of any Sort are done from 1s. 6d. to 20d. per Foot; Workmanſhip from 10d. to 1s.—Plain Facios rubbed 1s. 1d. per Foot; Workmanſhip 8d.—Brick Cornices from 4s. to 5s. per Foot; Workmanſhip from 3s. to 3s. 6d. —Cutting Bricks for rubbed and gauged Work, from 40s. to 2l. 10s. per Thouſand.

Of TILEING, *the Price.*

Plain Tileing: if to 7½ Inch Gauge, 1l. 4s. per Square;—if to 7 Inch Gauge, 1l. 8s. per Square;—if to 6 Inch Gauge, 1l. 12s. per Square; Workmanſhip from 3s 6d. per Square to 5s.: all Materials, except Tiles, are found, from 10s. to 12s. per Square: ripping old Tileing is from 15s. to 18s. per Square, according to the Goodneſs of the old Tiles.—Plain Tiles, per Thouſand, from 18s. to 1l. 2s. A Square of plain Tileing, at 6 Inch Gauge, takes 760 Tiles; the 7 Inch Gauge

690, and 7½ Inch Gauge 640.—To a Square of plain Tileing is uſed 1 Peck of Tile Pins, 2 Buſhels of Lime, 5 Buſhels of Sand, a Bundle of Laths, and 600 Nails.

Of PANTILEING.

Workmanſhip and Materials, with common Pantiles, at 20s. the Square, of which for Labour is 1s. 8d.—if laid without pointing, 18s. the Square, Workmanſhip 1s. Old Pantiles are laid at 10s. the Square, finding all Materials but Tiles; Dutch glazed Pantiles at 1l. 15s. the Square, and Engliſh at 1l. 10s. Pantiles for a Square are 170. Pantiles are ſold from 7s. to 8s. per Hundred, Dutch glazed at 10s.

Of PAVING.

Paving with red Bricks, Work, and all Materials, at 1s. per Yard, for Work only 5d.; ditto, with white Bricks, at 1s. 6d.; ditto, with Clinkers, 2s. 4d.; ditto, with poliſhed Foot Tiles, 8d. per Foot, with 10 Inch poliſhed Tiles at 6d. 10 Inch Tile Paving, not poliſhed, 3d. per Foot: Foot Tile Paving with common Tiles, 4d. per Foot: Ditto, Foot Tile Paving, ſquared and jointed, finding every Thing, at 6d. per Foot; Paving with Brick on Edge, Work only, 6d. per Yard. 36 ſix Inch Tiles will pave one Yard; 20¼ eight Inch, and 16 nine Inch, 13 ten Inch, and 9 Foot Tiles; Statute Bricks laid flat, 32 to a Yard, edgeways 48; Dutch Clinkers 90 to a Yard.

Of CARPENTERS *Work.*

TO frame the outſide Carcaſe of a Houſe, to hew and ſaw the Timber, Workmanſhip per Square 12s. Hewing and Sawing per Square 6s. with old Timber made ſtraight on both Sides 7s. If the Carpenter finds Timber, the beſt Way is to cube the Timbers at ſo much per Foot, Labour included, *viz.* Rough Fir Timber framed, the Foot Cube 2s. 4d. Labour included; if framed with Oak rough from the Saw, 3s. the Foot Cube, Labour included; in framing Barns and Workmanſhip, including Sawing, at 10s. the Square; Carpenters Work without Sawing, from 4s. to 5s. the Square; Fir Timber planed and framed at 2s. 8d. Labour included; Oak Timber planed and framed, at 3s. 6d. Labour included; rough Fir Timber, without Labour, from 2s. to 2s. 2d. the Foot Cube, in Scantling; rough Oak in Scantling, without Labour, 2s. 10d. the Foot Cube.

Of BOARDED PARTITIONS.

Boarded Partitions, with rough ſlit Deal, at 16s. the Square, Workmanſhip 2s. 6d. Whole Deal, planed on one Side, at 2s. 9d. the Yard, Labour 10d. planed on both Sides at 3s. 3d. the Yard, Labour 1s. Whole Deal Partitions grooved with ſlit Deal between, and planed on both Sides, at 2s. 4d. the Yard, Work 10d. Two Inch Deal, planed on one Side, at 3s. 4d. the Yard, Work 1s. Ditto, planed on both Sides, 4s. the Yard, Work 1s. 6d.

Of BOARDED FLOORS.

Rough whole Deal, liſted and clear of Sap, 1l. 15s. the Square, Workmanſhip 4s. 6d. Ditto, liſted and ſhot clear of Sap, 1l. 18s. Work 5s. the Square; folded joint Boarding planed, and liſted clear of Sap, at 2l. 5s. the Square, Workmanſhip 6s. Common ſtraight joint Flooring, clear of Sap, 2l. 15s. the Square; ſecond beſt Flooring nailed 3l. 5s. the Square, Workmanſhip 10s.; ſecond beſt dowelled, at 3l. 15s. the Square, Workmanſhip 15s. Clean Deal Floor dowelled, at 5l. 10s. the Square, Workmanſhip 1l. 1s.

Of BARN FLOORS.

To lay Barn Floors with 2 Inch Oak Plank lifted clear of Sap, at 3l. 10s. the Square, Workmanſhip 10s. Price of Plank 6d. the Foot, by the Sawyer's Meaſure; Joiſt of Oak 3s. the Foot Cube, Labour included. To lay a Barn Floor, with 2 Inch Deal, and to lift them clear of Sap, finding Deals at 2l. 15s. the Square, Workmanſhip 8s.

Note, The Price of the Oak Joiſt to be added to the 3l. 10s. in the Oak Floor, and to 2l. 15s. in the Deal Floor (for Joiſts may be cut of various Scantlings) ſo the Price will be according to the Number of Cube Feet they contain; they are commonly laid about 12 Inches apart.

Of SQUARES *and* COOLERS *for Brewing*.

For making of Coolers at 1s. the Foot ſuperficial, finding all Materials, Workmanſhip 4d. To make a Square with 2 Inch Oak Plank, to find all Materials, at 1s. 8d. the Foot Cube Meaſure.

Of WEATHER BOARDING.

Weather Boarding with Feather-edged Deal planed at 1l. 2s. and not planed at 18s. the Square; Work, when plained, 3s. the Square; ditto, not planed, 1s. 6d.—A Table, ſhewing how many Boards 10 Feet long, at four ſeveral Gauges, will complete a Square of Boarding.

Boards Ten Feet long to a Square,	at 8	Inch Gauge 10 Feet long,	15 Boards
	7		17
	6		20
	5		24
Boards twelve Feet long to a Square,	at 8	Inch Gauge 12 Feet long,	$12\frac{1}{2}$ Boards.
	7		$14\frac{2}{7}$
	6		$16\frac{2}{3}$

Of SASHES *and* FRAMES.

Saſh Frames of Deal Work, and all Materials, from 8d. to 9d. the Foot, Workmanſhip from $2\frac{1}{2}$ d. to 3d.; $1\frac{1}{2}$ Inch Saſhes of Deal, at 9d. the Foot, Work 3d. $1\frac{1}{2}$ Inch Wainſcot Saſhes, at 1s. the Foot, Workmanſhip 4d.

Of STAIR CASES.

Steps of Common Stairs, Strings, and String Bearers included, at 9d. the Foot, Work 2d. $\frac{1}{2}$; ſecond Beſt ditto, at 1s. the Foot, Work 3d. $\frac{1}{2}$, excluſive of Rails and Baluſters; ditto, with clean Deals and Brackets, at 1s. 6d. the Foot, Workmanſhip 8d. excluſive of Rails and Baluſters, which are 2s. 6d. the Foot running Meaſure; but if circular or rampt, the Price muſt be double.

Of CORNICES *to the Eaves of Houſes, &c.*

Plain Cornices out of whole Deal, at 1s. Workmanſhip 8d. the Foot ſuperficial; plain Modillion Cornices, or Cut Dentiles, at 1s. 10d. the Foot, Work 1s. Guttering and Bearers at 8d. the Foot ſuperficial; ſquare Trunks, to bring down Water from the Top of Houſes, at 10d. the Foot, running Meaſure.

Of FRONTISPIECES.

Frontiſpieces in the Tuſcan or Doric Orders, at 1s. 8d. the Foot, Work 1s. the Foot ſuperficial Meaſure; of the Ionic and Corinthian Orders 2s. the Foot ſuperficial,

ficial, Work 1s. 2d. excluſive of Carving; plain Shafts of Columns at 1s. the Foot, excluſive of Baſe and Caps; the Carving of Ionic Caps is done by the Face, according to the Diameter of the Column; *viz.* the Diameter 10 Inches, each Face will be worth 10s. at 1s. an Inch; ſo the whole Cap will coſt 40s. carving; Corinthian Caps at 2s. an Inch, &c.

Of PALE *Fencing.*

Four Foot Cleft Pale Fencing, 18s. the Rod, Workmanſhip 2s. Five Foot Cleft Pale Fencing, at 20s. the Rod, Work 2s. 6d. Park Paleing, with 5 and 6 Foot Cleft Pales, 2 Rails in a Pannel, at 1l. 2s. the Rod, Work 4s.; ditto, 3 Rails in a Pannel, at 1l. 5s. the Rod: Boarded Fencing, 5 or 6 Feet high, with rough Feather Edge Deals, at 20s. the Rod, Work 4s.; ditto planed, at 22s. the Rod, Work 5s.; ditto, of Poſt Rails and Boards, planed, with 3 Rails in a Pannel, Top and Bottom, Rails of Oak, middle Rail a Deal, Batten and Caping on the Top of the Pales, at 30s. the Rod, Workmanſhip 6s. 6d.—Of Palliſado Paleing, Poſt Rails and Pales of Oak, Poſt 6 Inches ſquare, Rails 4 by 3, Pales 2½ by 1 Inch thick, mortiſed through the Rails, at 4s. the Foot, running Meaſure, Work 1s. 10d. the Foot; ditto, with ſquare Pales, 1¼ Inch ſquare, at 3s. 6d. the Foot, with Fir 3s. the Foot, Workmanſhip from 18d. to 20d. running Meaſure; Palliſado Gates, the Framing with 2 Inch Stuff of Oak, Pales ſquare or flat, at 1s. the Foot ſuperficial, Work 6d.—Of common Five Bar Gates of Oak, the Head, Hur, and Top Rail ſawed, the Slats cleft, from 12s. to 14s. the Gate, Work only, Sawing, &c. included, 5s. Putting in Ground Cell, under Barns, &c. from 10d. to 1s. the Foot, Work and Stuff, running Meaſure, Work only from 4d. to 6d. the Foot.

Of JOINERS *Work.*

PLAIN ſquare Wainſcoting, with Deal, from 2s. 6d. to 3s. the Yard, Work 10d.; Deal Wainſcoting, with Ovolo, or Quarter Round, and flat Pannels, at 3s. 6d. Workmanſhip 1s. 4d. the Yard; ditto, with raiſed Pannels, at 4s. 6d. the Yard, Work 1s. 8d.; ditto, with Norway Oak, Ovolo and raiſed Pannels, Framing 1¼ Inch thick, Pannels ¾ thick, at 6s. the Yard, Work 2s. 2d. All Moulding not wrought with common Planes, but worked by Hand, as Impoſt, Moulding Baſes, Caps, Architraves, Pilaſters, Columns, Cornices, &c. are meaſured in ſuperficial Feet, and allowed from 1s. to 1s. 10d. the Foot for Work and Stuff, Work only from 1s. to 1s. 2d. the Foot, according to the Goodneſs of Workmanſhip; of Doors, quarter round and flat Pannel, 1¼ Inch thick, Four Pannels in a Door, at 8d. the Foot; ditto, Square Work, at 7d. the Foot, Work only 3d.½ and 4d.; ditto, ſtuck on both Sides Pannels, raiſed on one Side, and flat on the other, at 9d. the Foot, Work 4d.½; Bead and Fluſh on one Side, Ovolo, or Quarter Round, and raiſed Pannel on the other Side, at 10d. the Foot, Work 5d.; ditto, made of 2 Inch Deal, at 1s. 2d. the Foot; of 2½ Inch Deal, at 1s. 4d. the Foot, Workmanſhip from 6d. to 7d. the Foot. Bead and Fluſh on both Sides the ſame Price as Fluſh on one Side and raiſed on the other; ſix Pannel whole Deal Doors, raiſed on one Side, flat Pannel on the other Side, at 10d. the Foot, Workmanſhip 5d.; ditto, made of 2 Inch Deal, at 1s. 2d. the Foot, Work 6d.; ditto, of 2½ Inch Deal, at 1s. 3d. the Foot, Work 7d. the Foot; ſix Pannel Doors, made with 1½ Inch Deal, ſtuck on both Sides, and Pannels raiſed, at 11d. the Foot, Workmanſhip 5d.½; ditto, made of 2 Inch Deal, at 1s. 2d. the Foot, Work 7d.; ditto, made of 2½ Inch Deal, at 1s. 6d. Workmanſhip only 9d. the Foot; whole Deal Doors, battened in Front, and ledged on the Back, grooved and tongued, Glue, &c. at 10d. the Foot, Work 5d.; ditto, made with Inch Deal, at 8d. the Foot, Work 4d.; whole Deal Doors,

grooved,

grooved, tongued, and ledged, at 8d. the Foot, Work 4d.; ditto, with Inch Deal at 6d. the Foot, Work 3d.; whole Deal Doors ſquare jointed, beaded and ledged, at 7d. the Foot, Work 3d.; ditto, made with Inch Deal, at 5d. the Foot, Work 2d.½. whole Deal Doors glewed and ledged, at 8d. the Foot; ditto, with Inch Deal, 6d. the Foot; ſlit Deal Doors, beaded and ledged, at 4d. the Foot, Work 2d.

Note, Window Shutters the ſame Price as Doors of the ſame Kind of Work; large Doors or Gates framed, with 2½ Inch Deal, Bead and Fluſh on both Sides, at 1s. 8d. the Foot, Work 10d.; whole Deal Partitions, ſquare Work, 4s. the Yard, Workmanſhip 1s. 10d.; ditto, with 2 Inch Deal, 5s. 6d. the Yard, Work 2s. 6d.; whole Deal Partitions, with ſlit Deal, ploughed and tongued, at 3s. the Yard, Workmanſhip 1s.; Rakeing Wainſcot upon Stairs, whole Deal Framing, ſquare Work at 3s. 4d. the Yard, Work 1s.; ditto, with Ovolo and flat Pannel, at 3s 9d. the Yard, Work 1s. 3d.; ditto, with raiſed Pannels, at 4s. 6d. the Yard, Workmanſhip 1s. 8d.; dadoed, dovetailed, Band on the Back, at 8d. the Foot.

Of JAMBS *and* SOFFITS, LININGS *to* DOORS, WINDOWS, *&c.*

Slit Deal Jambs and Soffits, at 3½ the Foot; ditto, with three Quarter Deal, at 4d. the Foot; ditto whole Deal, 7d. the Foot; Inch Deal Window Boards, at 6d. the Foot; whole Deal ditto, 7d.; Skirting with ſlit Deal, 3d.½ the Foot; ditto, with Inch Deal, 5d. the Foot; ſlit Lining on Quartering, at 2s. 3d. the Yard.

Of DRESSERS *and* SHELVES.

Two Inch Deal at 1s. the Foot; whole Deal Dreſſers and Shelves at 7d.; ditto, with Inch Deal at 6d. the Foot; three Quarter ditto, at 5d. the Foot; half Inch Shelves at 4d. the Foot; all moulded Edges, and rebetted ſuperficial moulded Brackets for Shelves 1d. the Foot more than the Haberdaſhers Shelves; Deal Shelves grooved together, as Holes, Shops, &c. at 7d. the Foot; if planed on both Sides, meaſure the Run of Grooving at 1d. ½ the Foot; Inch Wainſcot clampt, as Counter Tops, Flaps, &c. at 1s. 1d. the Foot; ditto, with Inch and Quarter, at 1s. 3d. the Foot; Inch and Half ditto, 1s. 5d. the Foot; ſlit Deal glewed and planed, as Bottoms of Counters, &c. at 3d. ½; ditto, Inch, 5d. ditto, Whole Deal, 6d. the Foot.

Of PACKING CASES, *&c.*

Whole Deal Caſes ledged, at 5d.; ditto, Inch Deal ledged, at 4d. and ¾ ditto, 3d. ½ the Foot.

Of LATTICE *Work.*

Lattice Work Bars, 2 Inches wide, at 2s. 9d. ditto, Bars 1½ wide, at 2s. the Yard; Step Ladders, Sides and Steps of Whole Deal, at 9d. the Foot, ſuperficial.

Of CHURCH *Work.*

As Fronts of Galleries, Pews, &c. Wainſcot Doors 3 Inches thick, ſtuck on both Sides, and Pannels raiſed on both Sides, at 4s. the Foot; ditto, 2½ Inch thick, at 3s. the Foot; ditto, 2 Inches thick, at 2s. 6d. the Foot; Wainſcot Fronts of Pews, the Framing 1½ Inch thick, Pannels raiſed on one Side and flat on the other, at 9s. the Yard, of the ſame Circular, at 18s. the Yard; right Wainſcot Deſk Boards and Bearers, at 1s. the Foot, of the ſame Circular, at 2s. the Foot; Wainſcot Seats and Bearers, at 1s. 3d. the Foot, of the ſame Circular, at 2s. 6d. the Foot; Run of Capping on the Top of Pews 3¾ Inches wide, at 9s. the Run, of the ſame Circular at 1s. 6d. the Foot; Wainſcot Partitions to Pews, framed 1¼

Inch thick, Pannels raiſed ſquare on both Sides, at 7s. 6d. the Yard, ſuperficial; right Wainſcot Mouldings to Pedeſtals, Baſes, Impoſts, &c. at 2s. the Foot, ſuperficial; right Wainſcot Door Caſes, wrought with a Staff, and rebetted at 1s. 2d. the ſame Circular, 2s. 4d. the Foot.

Note, Circular Work is double the Price of Straight, and Circular Circular double the Price of Circular only.

Of PLAISTERERS *Work.*

PLaiſtering is of divers Kinds, as with Lime and Hair, Morter on Lathing, at 1s. the Yard, Work only from 5d. to 6d.; common rough Caſting from 1s. to 1s. 4d. Work only 5d. to 6d. the Yard; rough Caſting with Stone Morter, in Imitation of Stone Work, from 2s. 6d. to 3s. the Yard, Workmanſhip only from 6d. to 8d. Plaiſtering upon Brick Work with Finiſhing Morter, in Imitation of Stone Work, from 1s. 6d. to 2s. the Yard, Work only 6d.

Note, All plain Mouldings, if ſtraight, at 6d. the Foot ſuperficial, and if Circular, at 9d. the Foot; ſtraight Mouldings enriched, at 1s. and Circular, at 1s. 6d. the Foot, the Expence of Scaffolding to be added; for Lathing and Plaiſtering of common inſide Work, at 10d. the Yard, Work only 4d.; rendering on Brick Work, from 4d. to 6d. the Yard, Work only 2d; for Lathing and Plaiſtering of common Cielings, at 1s. the Yard, Work only 4d; ditto, fine floated Cielings, at 2s. the Yard, Work only 1s.; for Whitewaſhing with Whitings and Size, Work and all Materials, 2d. the Yard.

Note, One Bundle of Laths are ſufficient for 6 Yards of Plaiſtering. One Bundle of 5 Foot Laths will require 500 Nails; 4 Foot ditto, 600 Nails.

Of MASONS *Work.*

BLACK and white veined Italian Marble, at 20s. the Foot Cube; ſuperficial plain Work, on ditto, 3s.; ſuperficial, moulded on ditto, 5s.; Slabs of ditto, to Chimney Pieces, 5s. the Foot, ſuperficial; Purple Marbles, in Slabs, 8s.; Dove Marble at 6s. the Foot, in Slabs; Fire Stone Hearths and Covings, at 1s. the Foot, ſuperficial; Portland Blocks, from 2s. 4d. to 2s. 6d. the Foot Cube, from the Maſons; ſuperficial plain Work, on ditto, at 10d. the Foot; moulded Work, on ditto, from 1s. to 1s. 2d.; Portland Slabs, in Chimney Pieces, at 1s. 6d. the Foot, Inch and Half thick; ditto, if 2 Inches thick, at 2s. the Foot, ſuperficial; Portland Paving in ſtraight Courſes, at 1s. 6d. the Foot, ſuperficial; Octagon and black Dots, at 2s. 2d. black and white Marble Squares, at 2s. 9d. the Foot, ſuperficial; Purbeck Paving at 9d.; ditto, Steps, at 2s. the Foot, running Meaſure; Portland Coping for common Houſes, at 1s. 6d. the Foot, running Meaſure, being about 1 Foot wide, 3 Inches thick on one Edge, and one Inch and a Half on the other, when the Coping Stones are larger than to be cubed firſt, and meaſured ſuperficial plain Work. Portland Curbs for Iron Work, &c. muſt be cubed firſt, and then meaſured; ſuperficial plain Work, alſo Holes cut in the ſame for Iron Work, at 2d. each; Baſes of Columns, Architraves, Frizes, Cornices, &c. of Marble, are at 5s. the Foot, ſuperficial Meaſure, for Workmanſhip only; ditto, on Portland Stone, from 1s. 4d. to 1s. 6d. the Foot, ſuperficial, the Stone to be valued at the Cube Foot; Shafts of Columns and Pilaſters fluted, at 1s. 6d. the Foot, Work only; the above Prices are in common, but will vary according to the Quality of the Stone.

Of GLASIERS *Work.*

GLASING with Squares and Quarries in Lead Work, is from 6d. to 9d. the Foot; Saſhes, glaſed with Crown Glaſs, from 14d. to 16d. the Foot; with Newcaſtle Glaſs, from 10d. to 12d. the Foot; ditto with Waved or Jealous Glaſs, at 1s. 6d. the Foot; ditto, with Plate Glaſs, at 5s. 6d. the Foot, the Squares from 1 to 2 Feet; ditto, from 2 to 3 Feet, at 6s. the Foot; the Price of Glaſing in Squares, the Glaſier finding only Work, Solder, and Lead, at 3d. the Foot, Work only 1½d.; to glaſe with Quarries, the Workman finding only Lead, Solder, and Work, at 3½ d. the Foot, Work only at 2d. for taking down Quarry Glaſs, ſcouring, ſoldering, banding, and putting it up again, from 1½ d. to 2d. the Foot; 50lb. of turned Lead is ſufficient for 100 Feet of Quarry Glaſs.

Of PLUMBERS *Work.*

PLUMBERS Work is uſually done by Weight; viz. the great Hundred, or 112lb.; in covering of Flats, Roofs, Gutterings, &c. there is generally allowed from 7 to 10 or 12lb. to the ſuperficial Foot; all Sheet Lead, either caſt or milled, Solder and Labour included, at 20s. the Hundred, at which Rate every Foot of Lead, weighing 7l. is worth 15d. the Foot; ditto, 8lb. at 17d. the Foot; ditto, 9lb. at 19¼ d. the Foot; ditto, 10lb. at 1s. 9¼ d. the Foot; ditto, 11lb. at 1s. 11½ d. the Foot; ditto, 12lb. at 2s. 1½ d. the Foot; the Charge of covering with Lead is found by taking the ſuperficial Meaſure, and conſulting the above Pieces. All Water Pipes, Ciſterns, Batten Ciſterns, and Lead Pumps, at 1l. 2s. the Hundred; all Water Pipes, from three Quarters to 7 Inch Bore, at 20s. the Hundred; Saſh Weights, &c. at 18s. the Hundred; Allowance for old Lead is 14s. the Hundred; to exchange ditto for Sheets new run, 4s. the Hundred.

Of PAINTERS *Work.*

OUtſide Painting, three Times in Oil, at 8d. the Yard; inſide new Work, of common Colours, at 6d. inſide Painting old Work, with common Colours, at 4d. the Yard; but of extraordinary Colours, as Olive, at 8d. the Yard; Pruſſian Blue, at 10d. the Yard; Greens, at 1s. the Yard; Carving varies ſo much, that the Price cannot be eaſily aſcertained.

Of BLACKSMITHS *Work.*

BLACKSMITHS Work is done by Weight; all Sorts of hammered Work, as Chimney Bars, Stays, upright Window Bars, Shutter Bars, Pump Work, Bolts, Saddle Bars, Cramps, Holdfaſts, Dogs, Gudgeons, and all black Work of the ſame Kind, from 4d. to 4½ d. the lb. Caſements, Croſs Window Bars filed, and all ſuch Work, from 4½d. to 6d. the lb.; large Screw Bolts and Nuts, 6d.; Iron Doors and Shutters at 10d. the lb.

An Eſtimate for Building a New Houſe.

	£.	s.	d.
TO 600 Loads of Digging in Cellars and Foundations, at 6d. per Load	15	0	0
68½ Rods of Brick-work, reduced to 1½ Brick, at 6s. 5d. per Rod	428	2	6
21½ Square plain Tiling, at 1l. 8s. the Square	30	2	0
150 Feet Run of Arch Drain, at 2s. 6d.	18	15	0
45 Yards Brick Paving in Morter, at 2s. 6d.	5	12	6
92 Feet of rubbed and gauged Arches to Windows, at 1s. 6d.	6	18	0
112 Feet of rubbed and Gauge in Facio, at 1s.	5	12	0
270 Feet of rubbed Returns, at 6d.	6	15	0
120 Feet Run of rough Splays, at 1½ d.	0	15	0
45 Feet ſuperficial of ſummered Arches 1½ Brick, at 4d.	0	15	0
165 Feet Run of Groin, at 6d.	4	5	0
236 Feet 6 Inches of Foot Tile Paving, at 4d.	3	19	0
143 Feet Run of common Drain, 10 Inches wide, 9 Inches high, 4 Inch Walls, covered with Foot Tile, paved with flat Bricks, at 1s.	7	3	0
Total of *Bricklayers* Work	£. 533	14	0

MASONS *Work.*

	£.	s.	d.
To Chimney Piece in the Dining Room	65	0	0
——— Ditto, in the beſt Parlour	45	0	0
——— Ditto, in the Back Parlour	20	0	0
2 —— Ditto, in one Pair of Stairs, Front Rooms, at 10 l.	20	0	0
——— Ditto, in one Pair of Stairs, Back Room	6	0	0
65 Feet ſuperficial Portland Chimney Pieces, 1s. 9d.	5	13	9
30 Foot ſuperficial Ryegate in the Hearth, &c. at 1s.	1	10	0
185 Feet Cube Portland, at 2s. 4d.	21	6	8
630 Feet ſuperficial plain Work to ditto, at 10d.	26	5	0
120½ Feet ſuperficial moulded Work to ditto, at 1s. 2d.	7	7	0
250 Feet of Portland Paving, and black Dots in Paſſage and Stair Caſe, at 2s. 2d.	27	1	8
No. 5, Sink Stones, at 2s. 6d.	0	12	6
No. 160 Holes, cut in Portland, for Iron Bars, at 2d.	1	6	8
Total of *Maſons* Work	£. 246	11	3

PLAISTERERS *Work.*

	£.	s.	d.
To Dining Room Cieling, divided with Ornaments and Mouldings	36	0	0
265 Yards of common Cielings, at 1s.	13	5	0
250 Yards of floated Cielings, at 2s.	25	0	0
220 Yards of rendered and whitened, at 6d	5	10	0
45 Yards rendered, only at 4d.	0	15	0
569 Feet of ſuperficial Plaiſter Cornice, at 1s. 4d.	37	8	8
72 Yards of Stucco on Walls, at 1s. 10d.	6	12	0
Total of *Plaiſterers* Work	124	10	8

GLASIERS *Work.*

	£.	s.	d.
To 512 Feet ſuperficial Crown Glaſs, in Saſhes, at 1s. 3d.	32	0	0
20 Feet ſuperficial Lead Work, at 8d.	0	13	4
Total of *Glaſiers* Work	32	13	4

IRONMONGERS.

To No. 45, Pair of Shutter Hinges, at 1s. 8d.	3	15	0
60 Pair of Side Hinges, at 1s. 2d.	3	10	0
18 Pair of IL Hinges, at 4s. 6d.	4	1	0
6 Pair of X Garnets Hinges, at 1s. 6d.	0	9	0
60 Turn Buckles, at 6d.	1	10	0
30 Saſh Faſtenings, at 8d.	1	0	0
5 Stock and Plate Locks, at 2s. 6d.	0	12	6
Lock Hinges and Faſtenings to the Front Door	2	15	0
Ditto, to Back Front	1	10	0
Ditto, to the Kitchen Door	0	15	0
Total of *Ironmongers*	£. 19	17	6

BLACKSMITHS *Work.*

To 45½ Hundred Wt. of Iron in the Kitchen Grates, Crane, Iron Bars to Chimnies, Iron Rails and Palliſadoes in Front, at 4½d. lb.	95	0	0

PLUMBERS *Work.*

To 42¼ Hundred Wt. of Lead, in Ciſterns, Gutters, Seſpools, Rain Water Pipes, &c. at 20s.	42	5	0
46 Yards of Lead Pipe, at 2s. 6d.	5	15	0
A Leaden Pump and Iron Work	5	10	0
Cocks, Stop Cocks, and other Braſs Work to the Pipes	3	5	0
Solder to the above Work	2	5	0
Total of *Plumbers*	£. 59	0	0

CARPENTERS *Work.*

To 15 Feet 6 Inches Cube Oak, at 2s. 8d.	2	0	0
25 Feet ditto, framed, at 3s.	3	15	0
18 Feet ditto, planed and framed, at 3s. 6d.	3	3	0
215 Feet Cube Fir, at 2s.	21	10	0
1467 Feet ditto, framed, at 2s. 4d.	171	3	0
69 Feet 9 Inches ditto, planed and framed, at 2s. 8d.	9	8	0
Carried over	210	19	0

	£.	s.	d.
Brought over	210	19	0
To 195 Feet ſuperficial Gutter and Bearers, at 8d.	3	5	0
5¼ Square of Centering, at 13s.	3	8	3
10 Square of Groin ditto, at 18s.	9	0	0
165 Feet of Smooth ditto, at 3d.	2	1	3
605 Feet of ſuperficial Bracketing for plaiſtered Cornices, at 5d.	12	12	1
95 Feet rough ſuperficial whole Deal Boarding, at 5d.	1	19	7
63½ Feet ditto, planed on one Side, at 6d.	1	11	9
12 Square of ſecond beſt Flooring nailed, at 3l.	36	0	0
3¾ Square ditto, dowelled, at 3l. 15s.	14	1	3
12¾ Square of clean Deal Flooring, at 5l. 15s.	72	6	9
115 Feet ſuperficial whole Deal Riſor and Steps, at 9d.	4	6	3
126 Feet ditto, ſecond beſt Riſors and Steps, at 1s.	6	6	0
129 Feet ditto, clean Deal Riſors and Steps, at 1s. 6d.	9	13	6
36 Feet 9 Inches Run of right Wainſcot, Rail and Banniſters, at 7s. 6d	13	15	7½
45 Feet Run of Deal Rail and Banniſter, at 3s. 6d.	7	17	6
Total of *Carpenters* Work £.	405	2	0½

JOINERS *Work.*

To 165 Yards of ſquare Deal Wainſcot, at 3s.	24	15	0
250 Yards, framed with Ovolo and flat Pannel, at 3s. 6d.	43	15	0
110 Yards Inch and Half Framing, Inch Pannels and dado'd, 4s. 9d.	26	2	6
605 Feet ſuperficial Deal Moulding, at 1s. 2d.	35	5	10
163 Feet ſuperficial whole Deal Shelves, at 7d.	4	15	1
65 Feet ſuperficial of 2 Inch Deal Dreſſer, at 1s.	3	5	0
22 Yards of Slit Deal Lining, at 1s. 10d.	2	0	4
280 Feet of ſuperficial whole Deal Shutters, at 10d.	11	13	4
286 Feet ſuperficial 2 Inch Deal Doors, at 1s. 2d.	17	1	8
96 Feet ſuperficial whole Deal Doors, tongued and ledged, at 8d.	3	4	0
42½ Feet ſuperficial Wainſcot Doors 2½ Inch thick, 3s.	6	7	6
296 Feet ſuperficial Wainſcot Saſh and Frame, at 2s. 8d.	39	8	0
256 Feet ſuperficial Inch and Half ditto, at 1s. 10d.	23	9	4
Total of *Joiners* Work	235	17	7

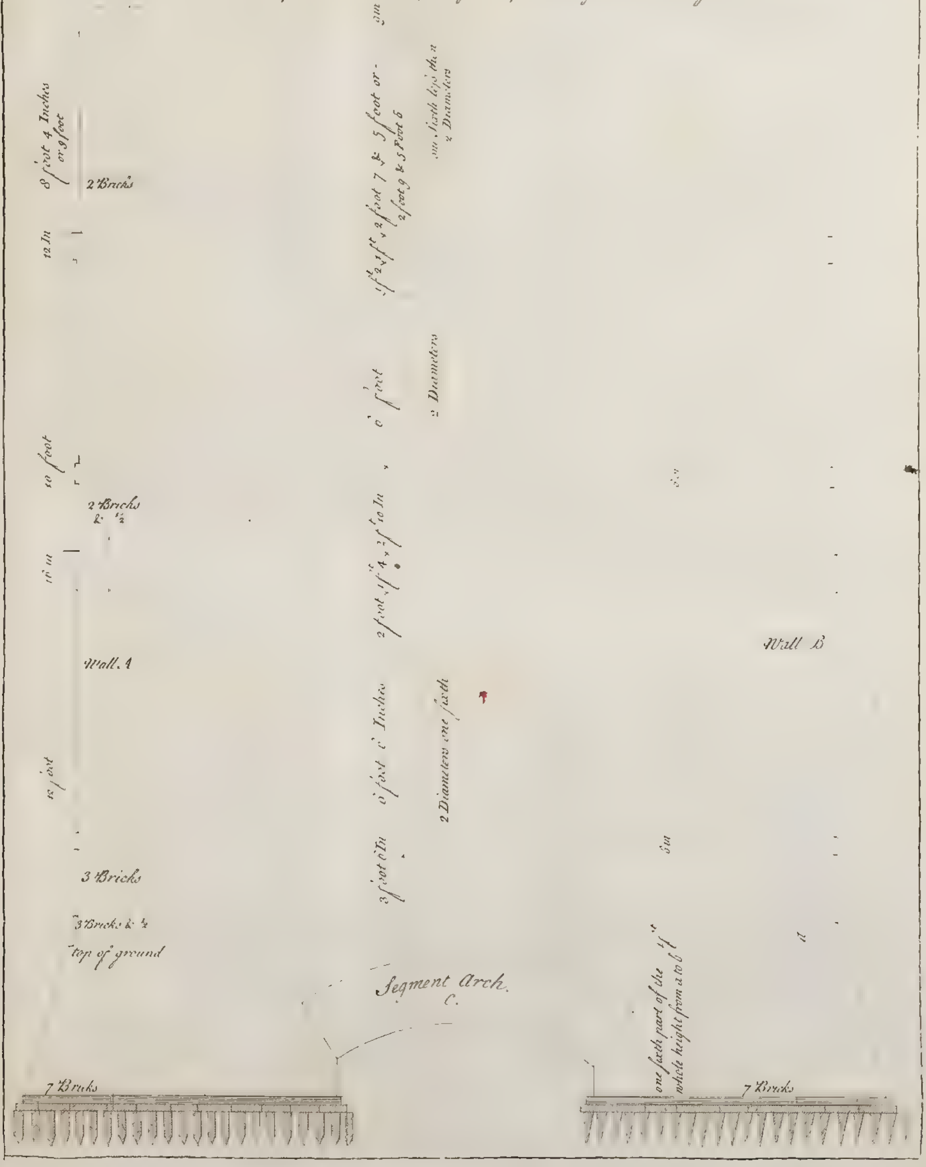
PAINTERS *Work.*

To 1312 Yards of Painting, 3 Times in Oil, at 6d.	32	16	0
165 Yards, outſide ditto, 4 Times in Oil, at 8d.	5	10	0
No. 26 Saſh Frames, at 1s. 4d. each	1	14	8
320 Saſh Lights, at 1½d. each	1	6	8
5 Window Lights, at 1s.	0	5	0
Total	41	12	4
Total, except the Carriage £.	1774	19	0½

Note, The Charge of carrying the Materials is omitted in general.

It is neceſſary, to convey a better Idea of the Work, and alſo prevent Diſputes, previous to the erecting any Building, to draw Plans of every Floor, and Elevations of each Front: in large Works, I would recommend a Model, which, being done to a Scale, may be eaſily eſtimated by the foregoing Tables.

The manner of diminishing of walls and the diminishing of Rooms and windows in there height, the Wall A diminishes on each side a like which gives the whole Wall a pyramidal form and is the Strongest and best way of diminishing. The wall B diminishes all from the inside which is often done but that is not so Strong as the other. The manner of preparing Foundations when piling and plank is required by driveing Bed of Piles, at Certain distances then lay planks croſs each other and turn arches from one pier to the other as C, but in some Cases the whole Foundation must be piled & plank'd it is a very good way to turn ſegment arches over the Ends of gerders & Beames that layes in the walls & over lintels of doors & windows to take of the weight & if the wall ſhould ſettle it will keep them from Cracking or damage & it is very nescessary to lay in ſtrings of Bond timber above the arches of windows & other openings well framed together at the angles &c.


2 foot 0
10
8 foot 4 Inches or 9 foot
2 Bricks
12 In
1 f 2 f 2 foot 7 & 5 foot or 2 foot 9 & 5 foot 6
3 In
one sixth less then 2 Diameters
6 foot
2 Diameters
10 foot
2 Bricks & ½
10 In
2 foot 1 f 4 2 f 10 In
Wall. A
Wall B
3 foot 0 In
6 foot 0 Inches
2 Diameters one sixth
12 foot
3 Bricks
3 Bricks & ½
top of ground
3 In
a
Segment Arch.
C.
one sixth part of the whole hight from a to b
7 Bricks
7 Bricks

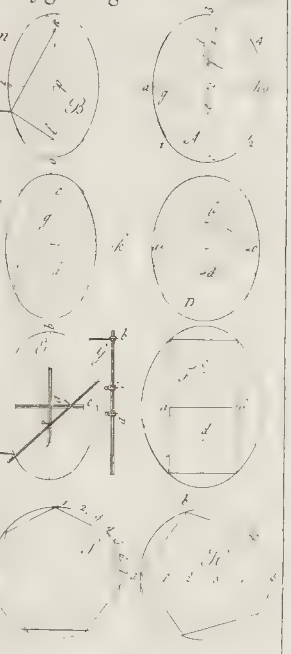
A Table of Scantlings for the Cutting of Timber for Building

I do not inſist that the Scantlings of Timber ought to be exactly as by the Table but may be varied in ſome Reſpects as the workmen ſhall ſee fit.

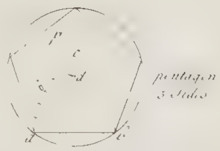
Bearing Posts Height	of Oak Scantling	Bearing Posts Height	of Fir. Scantling
if 10 feet	6 Inches ſquare	if 8 feet	8 Inches ſquare
12	8	12	12
14	10	16	16
Girders of Bearing	Oak Scantling	Girders of Bearing	Fir. Scantling
if 16 feet	10 Inches by 13	if 16 feet	11 Inches by 13
20	12 14	20	13 15
24	14 15	24	15 17
Joists of Bearing	Oak Scantling	Joists of Bearing	Fir Scantling
if 6 feet	5 Inches by 3	if 6 feet	6 Inches by 3
9	7½ 3	9	9 3
12	10 3	12	12 3
Bridgings of Bearing	Oak Scantling	Bridgings of Bearing	Fir Scantling
if 6 feet	4 Inches by 3	if 6 feet	5 Inches by 3½
8	5½ 3	8	6 3½
10	7 3	10	8 3½
Small Rafters Bearing	of Oak Scantling	Small Rafters Bearing	of Fir Scantling
if 8 feet	4½ Inches by 3	if 8 feet	5 Inches by 3
10	5½ 3	10	7 3
12	6½ 3	12	9 3
Beams or Tyes Length	of Oak Scantling	Beams or Tyes Length	of Fir Scantling
if 20 feet	7 Inches by 8	if 20 feet	8 Inches by 9
30	8 10	30	9 10
45	10 12	40	10 12
60	13 15	50	11 13

Principal Length	Rafters of Scantling Top	Oak Bottom	Principal Length	Rafters of Scantling Top	Fir Bottom
if 15 feet	5½ Inches & 6½	6½ Inches & 7½	if 15 feet	6 Inches & 7	7 Inches & 8
20	6½ 7½	7½ 8½	20	7 8	8 9
30	8 9	9 10½	30	8 9	9 10

The Manner of Striking Ellipſis & other Polygon Figures.

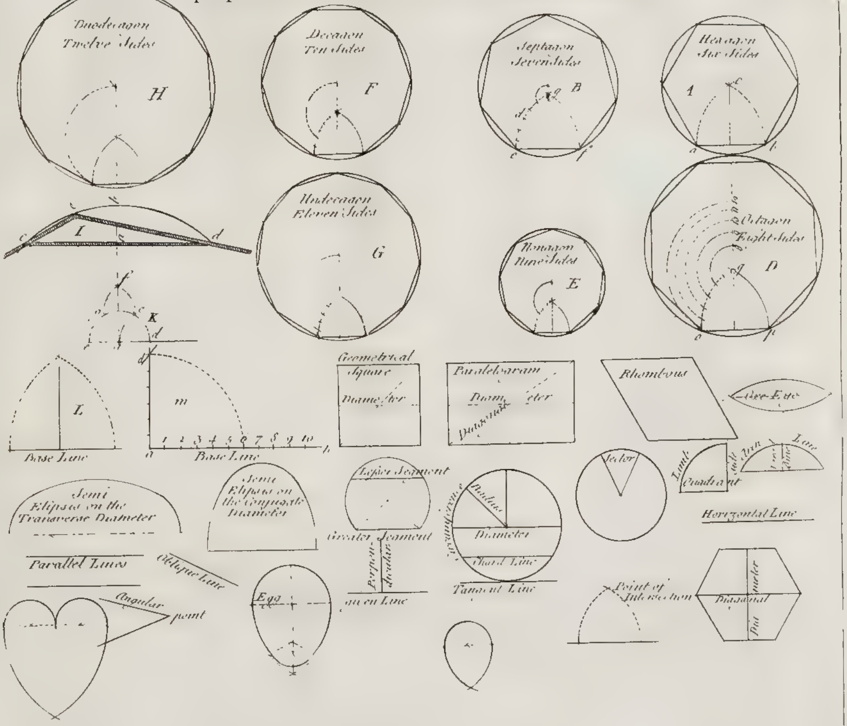


To Draw an Ellipsis as figure A to any given Length and Breadth take the Conjugate diameter a, b, & set it on the transverse diameter, as c, d, & divide the Remaining, into three parts, set two of those parts from the Center o to f, then make o, e, Equal to o f, then Biseet e f at g & h, then e f g h will be the Centers to ſtrike the Ellipsis, the Center e ſtrikes the Arch 1,2, the Center g ſtrikes 2,4 &c. To ſtrike the Ellipsis B with a line take half the transverse diameter o p & set it from i to k & l, then k l will be the Centers for the line to run Round to ſtrike the Ellipsis Figure c & D, are Drawn with two Circles, and the Centers marked with Letters which is plain. Figure E is the way to ſtrike a Ellipsis with a Tramel; make a Croſs at right angles with a Grove in the middle then make a Rod as G with three heads on it one to be fix'd, for the pencel as b, the other two moveable like the head of a gaige, then to set the heads right from the pencel b, to the head a, must be half the transvers diameter as a b in figure E, then from the pencel b to the head c must be half the Conjugate diameter, as a c then the head fix'd fast with a wedge and pins cut to fit the grove as at a, c, then move the Rod Round with the pins in the Grove and the pencel will ſtrike the Ellipsis which was to be done &c. Figure F. is the way to strike Ellipsis with two Geometrical Squares. The Centers mark'd with Letters which is plain.



To Draw any Regular Polygon in a Circle, as figure H, divide the diameter of the Circle into as many parts as You'll have sides in the polygon, then make a Radius of the diameter as a 5 e, then from the point e draw a line to touch two of them parts, and the arch Line of the Circle as at b then a b will be the side, & this Rule will do for a Polygon of any Number, Sides divide the diameter into as many parts as you would have sides, in the polygon and allways draw a line through two parts to the Circle. To draw any Regular Polygon in a Circle, another way allways divide one fourth part of the Circle into as many parts as You'll have ſides in the Polygon, as in figure S, and take four for the ſide &c. To draw a Pentagon as figure p, when the side is given, as a b make the side a b Radius as a c, and c b, then divide the arch a c into ſix parts then set one foot of the Compaſses at c, and turn one part down to d that will be the Center to ſtrike the Circle that will Contain the ſide a b five times.

The manner of Striking Polygon Figures and Raiſing perpendiculars at the end & middle of Lines.


Duodecagon
Twelve Sides
H
Decagon
Ten Sides
F
Septagon
Seven Sides
B
g
d
e
f
Hexagon
Six Sides
A
c
a
b
c
I
d
f
K
d
Undecagon
Eleven Sides
G
Nonagon
Nine Sides
E
Octagon
Eight Sides
g
D
o
p
L
Base Line
m
1 2 3 4 5 6 7 8 9 10
a
Base Line
b
Geometrical Square
Diameter
Paralelogram
Diameter
Diagonal
Rhombus
Bee Eye
Semi Elipsis on the Transverse Diameter
Semi Elipsis on the Conjugate Diameter
Lesser Segment
Greater Segment
Perpendicular
Circumference
Radius
Diameter
Chord Line
Tangent Line
Sector
Limb
Quadrant
Line
Horizontal Line
Parallel Lines
Oblique Line
Angular point
Egg
Point of Intersection
Diagonal
Diameter

To draw a Polygon when the side is given as Fig. A. which is a Hexagon or Six sides; make a Radius of the side a b. & bisect at c. which is the Center to strike the Circle that will contain the side a b. six times. Fig. B. is a Septagon, to draw when the side is given as e f. make a Radius of e f. & besect at g. then divide the Arch e g. into six parts, & turn up one part for the Center, that will strike the Circle, yt will contain the side e f. seven times. To draw the Octagon Fig. D. when the side is given as o p. make a Radius of the side o p. then divide the Arch line a q. into six parts & turn up two for the Center at 8. then the Center 8. will strike the Circle that will contain the side o p. eight times, & so on for Polygons of nine, ten, eleven & twelve sides, wch is plain by Fig. E. F. G. H. Fig. I. is a way to strike a Segment without a Center, make a Bevil to ye Rise of the Arch a b. then tack in Nails as c d. then wth a Pencil at ye point e. move ye Bevel round, true to ye Nails wth the Pencil e. from b. to c. then turn ends wth the Bevel & move it round from b. to d. that will complete ye Arch. k. l. & m. is ye manner of raising perpendiculars at ye end & middle of lines. In K. at ye point a. set one foot of ye Compaſses & strike ye Circle e d. then wth the same opening describe ye Arches g f. & e f. then f a. will be perpendicular to a d. to make ye perpendicular m. set ye Compaſses at any distance & turn over ten parts as a b. then at ye point a. turn up six parts to d. then take ye ten parts a b. & set one foot of ye Compaſses at 8 & Bisect ye Arch at d. then d a perpendicular.

The manner of tracing Hips for Groins & Angle brackets in any case

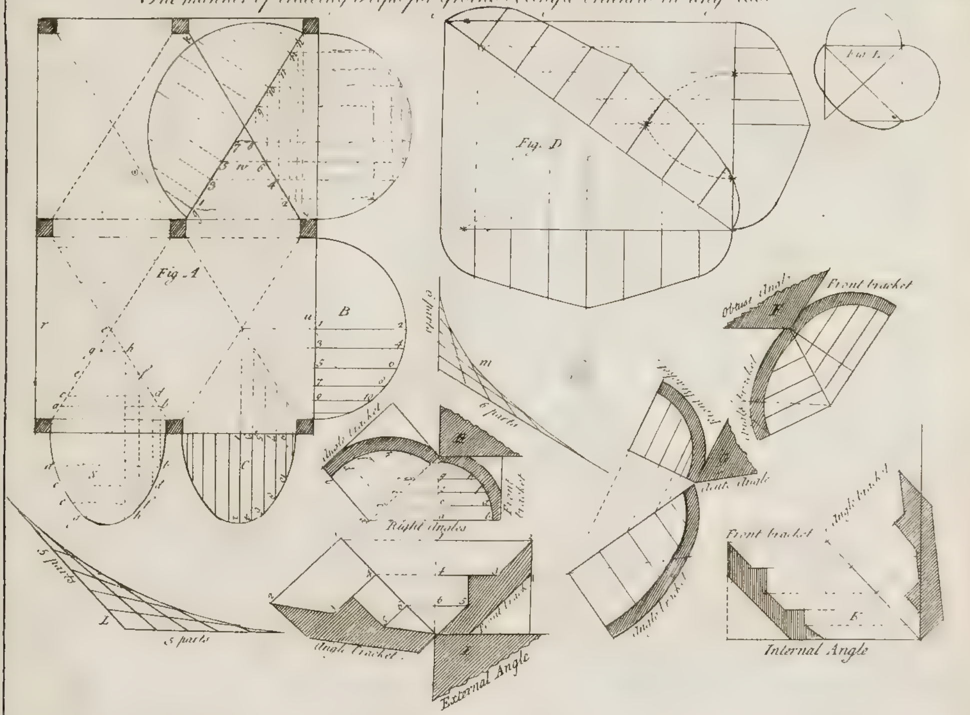


Fig. A
B
C
S
r
u
L
m
5 parts
5 parts
6 parts
6 parts
Fig. D
Fig. E
Obtuse Angle
Front bracket
Angle bracket
Front bracket
Right Angles
Angle bracket
External Angle
Front bracket
Angle bracket
Internal Angle

To trace the Hips in Fig. A, draw the given Rib B, & the Ordinals 12 34-56 78 9:10 then drop the Lines to the Diagonal line, then from the Diagonal-line, draw the Ordinals 12=34=56=78=9.10 for the Rib C, which are equal in length to them in B, then throw the points 2 4 6 8 10 trace the Curve which will cut the Jack Ribs as a b c d e f g h in S, then set the Centers, first set the Range of Ribs r u. and board it in, then to find the Angle line to set the Jacks, set up a Plumb rule at the Angle a, then take a streight Rule, hold one end at the Center e, & slide it down the edge of the Plumb-rule, & mark it by that no. will be the Angle & Center for a Brick groin, to make a Groin for Plaistering the Hips, must be first cut & set over g h. & i k, & the Jack ribs cut between them as 1:2 :12 -3:4 -11 -5:6 :10 -7:8 -9, & to be fair on the under side for Lathing. the same manner will do for the Gothic Groin Fig. D, and for the Angle Brackets F. G. H. I K which is plain to inspection, the regular Groin Fig. E, the Tramel will strike the Hip, or an Angle bracket if the front Bracket be a quarter of a Circle, but when the Groin is irregular, the Angle must be trac'd as Fig. A. To form a Curve by the Inter section of right Lines as l and m divide each part into the same number of parts, and draw the lines which will form the Curve.

The Cover or Cielling for Groins Stretched out.

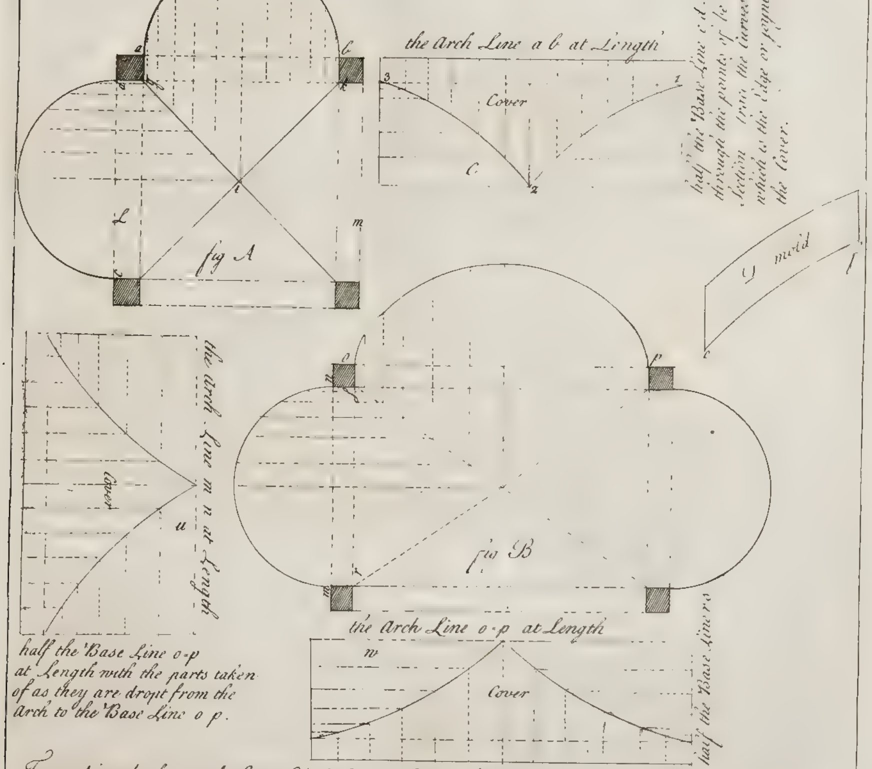
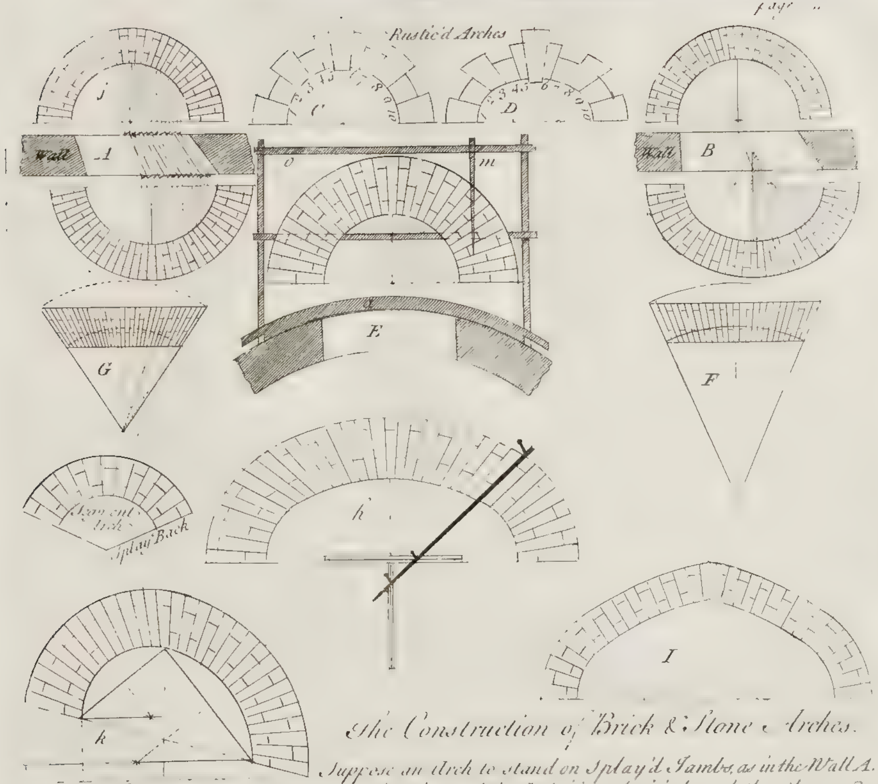

a
b
g
k
i
L
m
fig A
the Arch Line a b at Length
3
1
2
Cover
C
half the Base Line c d. through the points of the Section from the turns 1 2 3 which is the Edge or joynt of the Cover.
D mold
f
e
the Arch Line m n at Length
Cover
u
o
p
n
m
fig B
the Arch Line o-p at Length
w
Cover
half the Base Line o-p at Length with the parts taken of as they are dropt from the Arch to the Base Line o p.
half the Base Line

Figure A is a plan for a regular Groin; C is the Cover or Cielling of the Groin Stretched out, which will Cover One fourth part of the Groin in plan A and figure D, is a Mold traced in the same manner, then when one Range of Ribbs is Boarded as from L to m, then take the mold D and make good the Point e to i in the Center, and bend the mold true to the Cover, till the Point f touches k, on the angle of the plan, then mark by the Edge e f, that will give the Angle; then turn the mold D over to i g and mark as before, that will be the other Angle; and the same manner will do for the Angles, in plan B. if the mold be taken from the Edge of the Covers u and w. that is according to which is first Boarded; This Rule will do for any groin whatsoever if rightly managed To fix up a ſtrait Piece at the Angle k upright and Bend a ſtrait Rule round the Cover and ſlide it down against the Edge to k, and mark it by that will give the Angle.



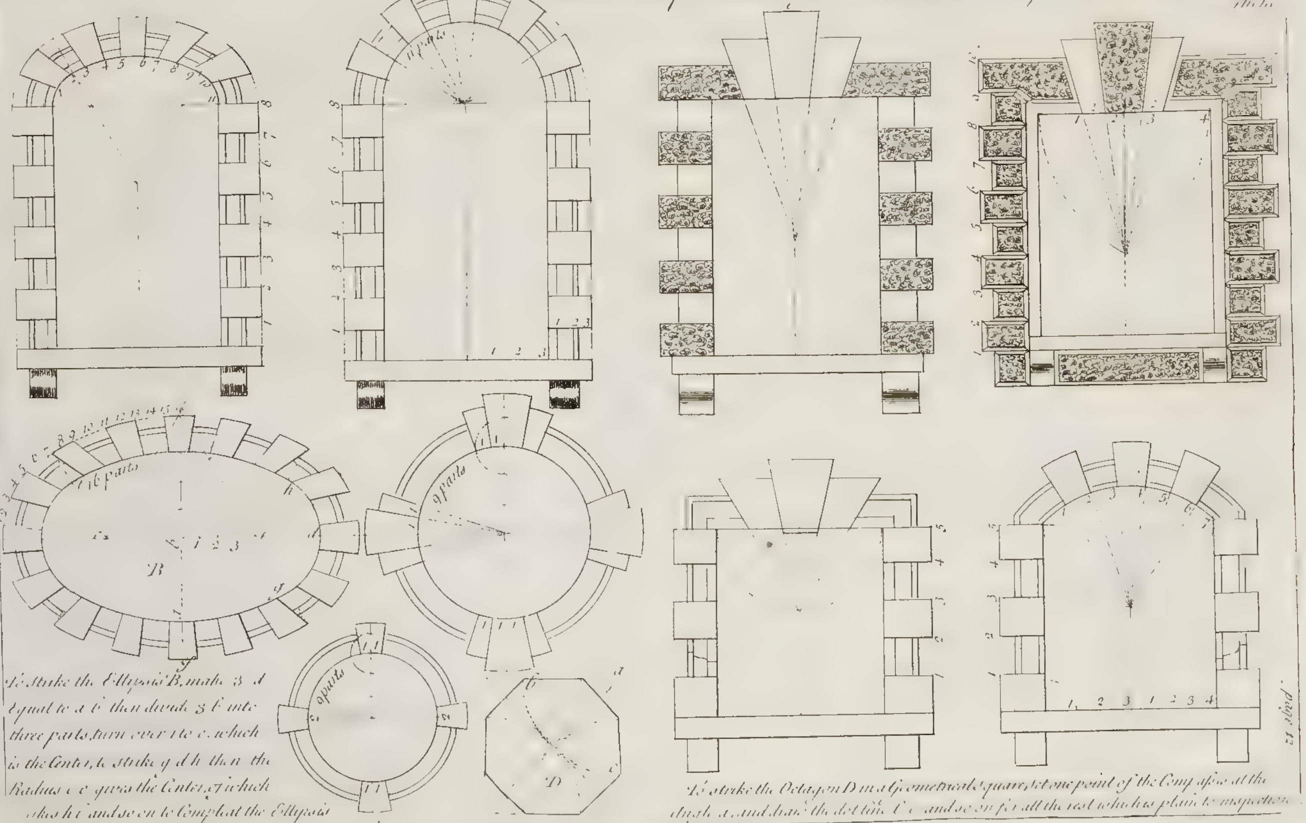
The Construction of Brick & Stone Arches.

Suppose an Arch to stand on Splay'd Jambs, as in the Wall A. and one of the Jambs Splays more than the other, and the Arch J. is a Semicircle, and the other a Ellipsis, both to Rise alike, then from the Suffit of Each Arch, drop lines to the Plan of the Wall A. then from the dotted, draw the lines on the Plan, which is the Suffit of Each Course, and Shews how Each Course is to be Cut on the face, it is best to make the Center, and Board it Close, and divide the Courses of Each Arch on the Edges of the Centers, then draw the Suffit of the Courses on the Center, this is a Safe and Sure way for Arches of this kind, the Arches which stand in the Wall B. one Jamb Splays, and one is Square, but the Arches to be managed in the same manner as in the Wall A. but it is best to divide the Arches in the Courses in a odd number, then the key Brick will be in the Center of the Arch, and the thickneſs of Each Courses, on the upper part of the Arch, to be something leſs than the thickneſs of a Bricks, to allow for Rubbing, suppose a Semicircular Arch to stand in the Circular Wall E. and to Cut the Arch, make two Ribbs as a. to the Curve of the Wall, and fix the Center any where Level, set up two Standards, and fix one Rib as o, and let the other be moveable as wanted, then mark the underside of the Brick by the first Course, and the Top of the Course with a Scriber, as m. draw it true to the Moulds, that will mark what is to come off, from the face of the Brick, and all the Courses so managed will Compleat the Arch.

The Arch h the Sommering of the Courses are described by the Tramel Rod, the Arch k. is a Semicircle on a Reaking Base, the Arch I. is a Gothic Arch F & G are Splay Back Arches

Note the Soffits of the Arches F & G to Camber an ⅛ of an Inch in a Foot that is ½ an Inch in 4 Feet &c

The manner of Rusticating Windows with all the parts shewn how to draw them

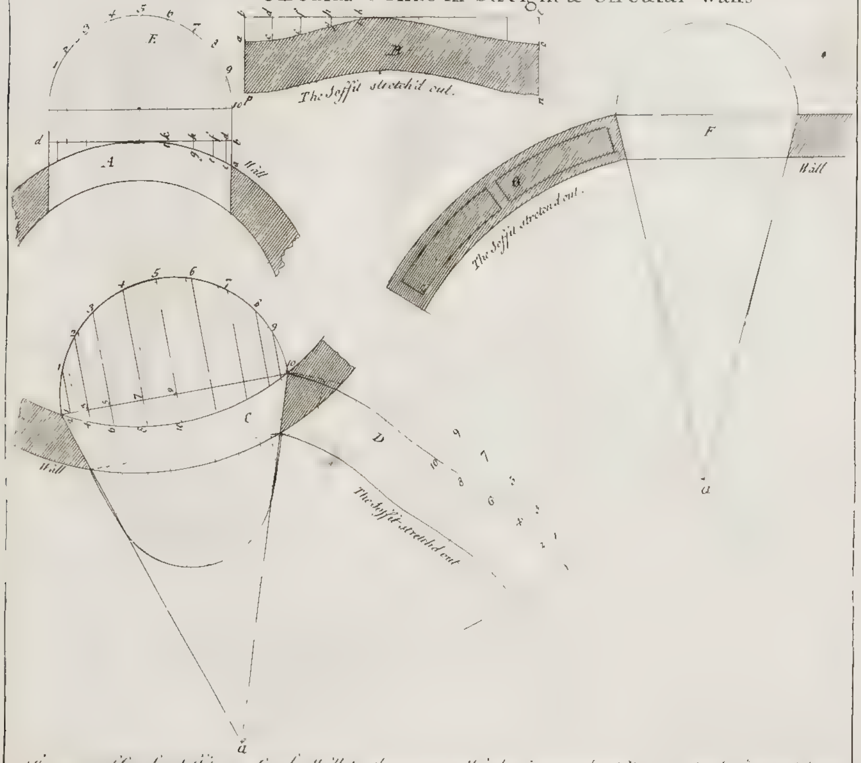

1 2 3 4 5 6 7 8 9 10 11
1 2 3 4 5 6 7 8
11 parts
1 2 3
1 2 3 4 5 6 7 8
1 2 3
1 2 3 4
1 2 3 4 5 6 7 8 9 10 11 12
8 9 10 11 12 13 14 15 16
16 parts
B
1 2 3
a b c d g h
9 parts
9 parts
D
a b c
1 2 3 4 5
1 2 3 4 5 6 7
1 2 3 1 2 3 4

To Strike the Ellypsis B, make 3 d equal to a b then devide 3 b into three parts, turn over 1 to c. which is the Center, to strike g d h then the Radius c e gives the Center, 7 which strikes h i and so on to Compleat the Ellypsis

To strike the Octagon D in a Geometrical square, set one point of the Compass in at the angle a, and draw the dot line b c and so on for all the rest which is plain to inspection

page 12

Circular Soffits in Streight & Circular Walls

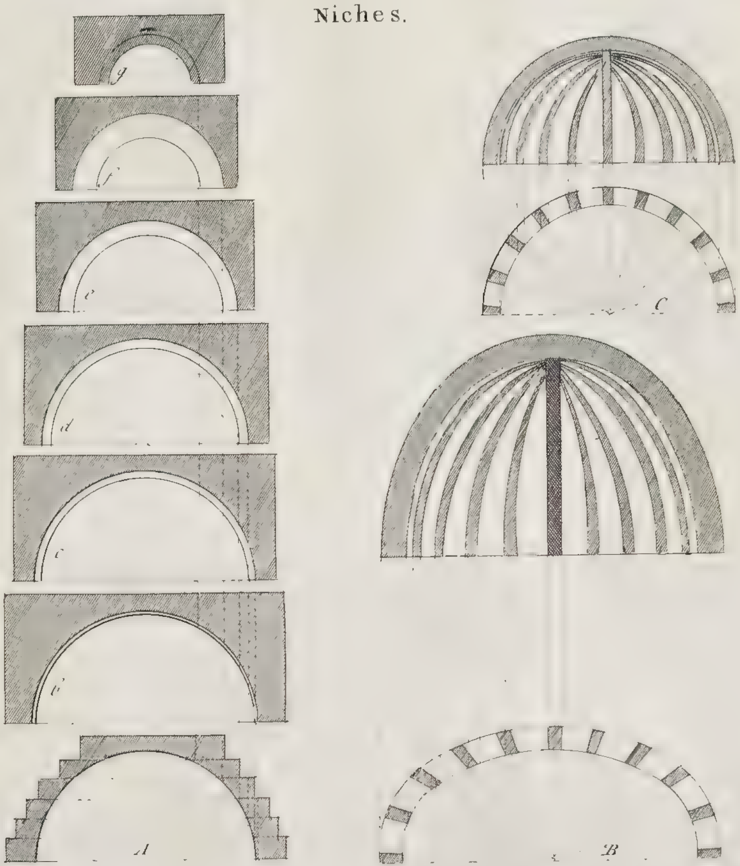


The manner of Circular Soffits, in a Circular Wall. A is the opening a Window in a circular Wall, & B is the Soffit stretch'd out and that will fit the Curve of the Wall when bent to the Arch, and the Jambs stand square to the Cord line of the opening, then to trace the Soffit, divide the Arch line E. into any number of parts, as here into ten, but the more parts it is divided in the truer it is, and drop Lines from them divisions, to the Cord line d. b. that touches the Wall, then the Line b. e. is the length of the Arch-line E. which is to be divided in the same number of parts as the Arch-line E. then take the Ordinals between the Cord-line & the Wall as a. b. c. d. e. f. g. h. i. k. and set them on the divisions of the Line b. e. as a. b. c. d. e. f. g. h. i. k. & that will be the edge of the Soffit, then the width of the Soffit, set on paralel as n. o. then draw the Line n. p. that will be the Soffit

The Soffit D. is done in the same manner, which is plain by the parts & figures only the Jambs splays in the Wall C. which makes the Soffit flewing, & the outside Arch is Elipsis, which makes the Soffit winding, but the outside Arch may be a semicircle & that continued with the ſplay of the Jambs, the Soffit will be flewing, & not winding

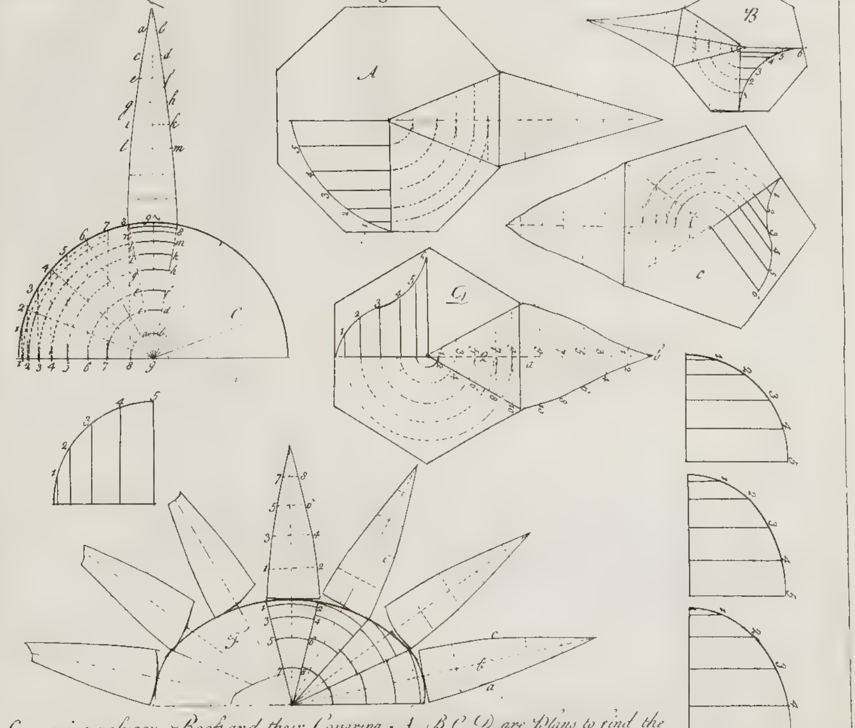
E is a spay'd or flewing Jambs in a streight Wall, & G is the Soffit stretch'd out, the splay of the opening drawd to a. that is the Center for the Soffit G. and the same in D. to trace from, when the Soffit is to be fram'd, put on the margents as in G. & that will give the Curve or Edge of the Pannel & to make the Stile or margent Glew up a Rib to the Soffit of the Arch, & let it be wide enough to scribe to a templet, made to fit that part of the Wall, the Soffit stands in, & when scrib'd to the Templet, bring to its width, & that will be the Stile, or margent requir'd, &c.

Niches.



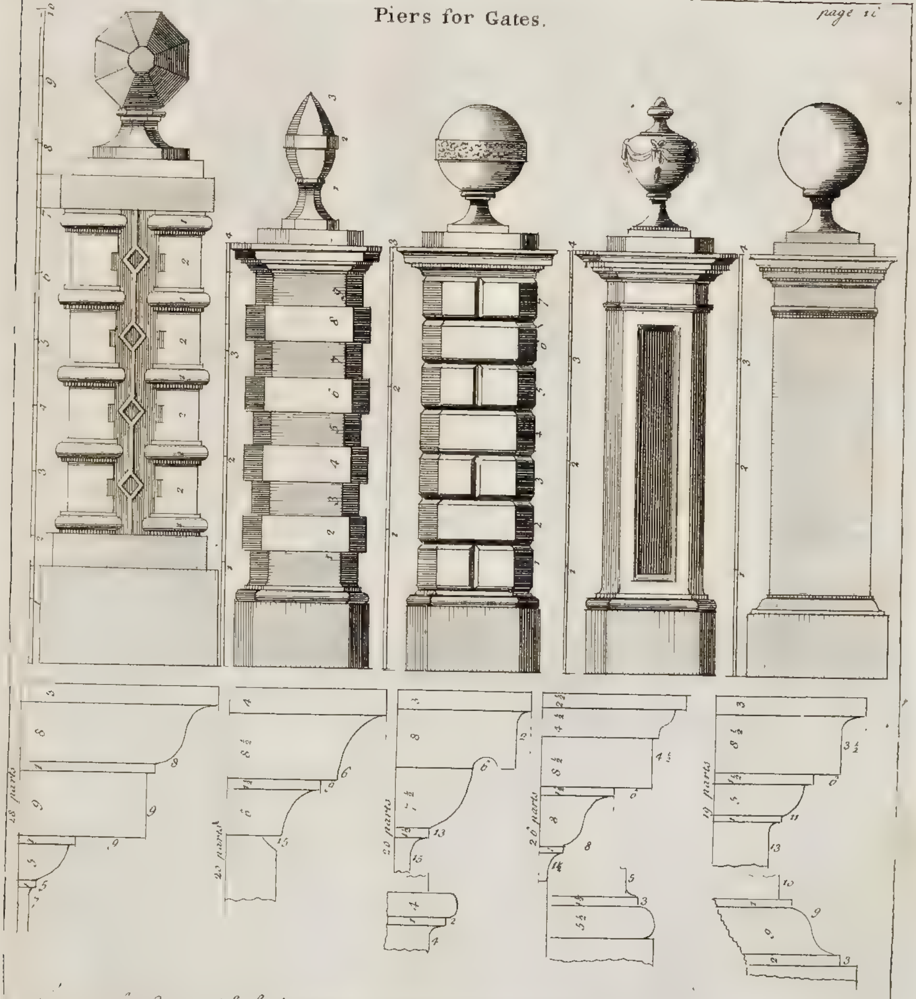
The manner of Glewing the head of a Niche, with thickneſs of Planks as that of A.b.c.d.e.f.g. are the thickneſs that will Compleat the Niche, but if the Niche be large, it will require more thickneſs, and the dotted lines drawn up from one thickneſs to the Other shews how much the Planks Bevel on the Edge, therefore when they are glewed together, take a Smoothing Plain, and make it Compass and a little quicker, then the head of the Niche, then smooth it off. then the Niche will be Compleat, but if the Niche is to be Fineered the manner of Cutting the Fineer is shewn in the next page Sometimes the Niche is enrich'd with a Shell, or painting. that of B is a Semi Ellipsis, for plaistering with Ribs, for Plaistering or Canvas, or it may be Covered with Boards or Lead, that of C is a Circular Ribb'd Niche to be Plaister'd or Cover'd with Boards, and if Covered with Board, it must be Cut in the same manner as the Fineer.

Fineering of Niches.

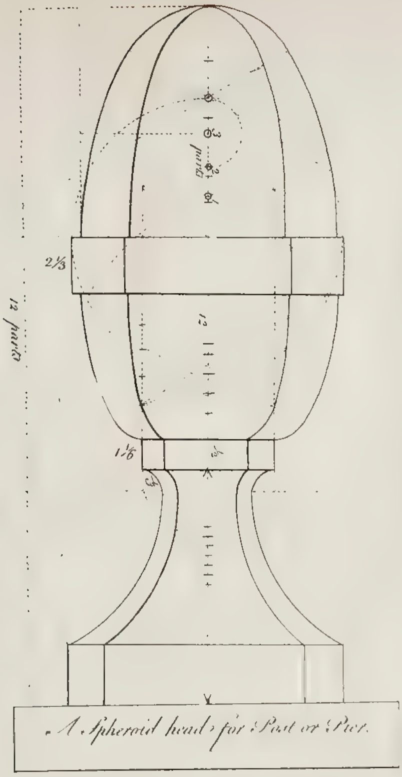


Concerning polygon Roofs and their Covering, A B C D are Plans to find the Covering; first Strike the Ribb or Rafter, and divide the Curve or Back of the Rafter into Equal parts as here into 6 parts; but if they be divided into more parts, the truer it will be, & from them parts draw lines to the Base line of the Ribb, or Rafter, then from the Base lines draw the Circular lines to the Base Line 2, in the Plan D; then draw lines at right angles to the line 2, as 1.2.3.4.5.6.7.8.9.10, then lay down the Length of the Curve or Back of the Rafter, as a b then take one of them parts of the Back of the Rafter & that will go 6 times from a to b, then draw the dotted lines at Right angles to the Line a b, then take the distance from the Line 2, as 1.2.3.4.5.6.7.8.9.10, & set them from the line a b on the dotted Lines as 1.2.3.4.5.6.7.8.9.10. & that will give the Edge of the Covering, the same way will do for the Covering in A, B, & C. The manner of fineering Circular & Elliptical niches. C, is a Circular nich, & to find the Edge of the fineer or Cover divide half the Arch or plan into 9 parts & drop them to the Base line, then set the Compasses at the Center 9, & ſtrike the dotted Circles 8 a, 7 c, 6 e, 5 g, &c. then lay down the Arch line of the Ribb at length as e f, which is equal to the diviſion on the arch line of the plan, then take the distance in the plan a b, c d, e f, g h, i k, l m, &c and set them at Right angles on the parts in the line e f & that will be the edge, to fineer the Elliptical nich F, there must be a Ribb Laid down to the Base Lines of the Centers & edges of each fineer, there Lengths being different, but here is but one to each Center.

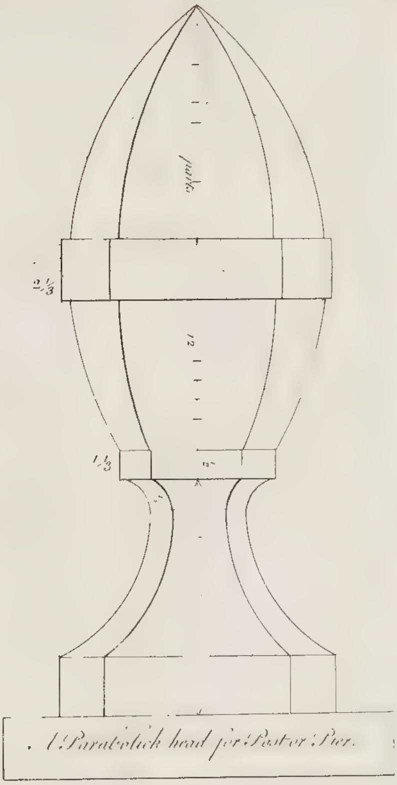
Piers for Gates.



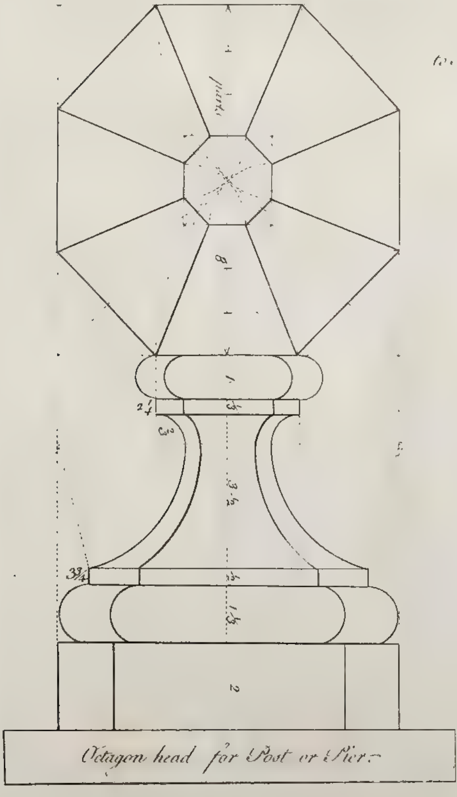
Five piers for Gates with ſcales and proportions for the Bases and Cornices of the piers the height of Each Cornice to be divided into as many parts as is figur'd at the Back of Each Cornice and these parts disposed to Each member as they are figur'd in height & projection. The height of the Balls and Vaes above the Cornices may be one third of the height of the piers or one fourth of the piers height by the Scales up the ſide of the piers and the height of the Cornices to be one ſixteenth part of the piers height &c. the height of pointies is [illegible] [illegible] of the piers height.


2⅓
12 parts
3 parts
12
1⅙

A Spheroid head for Post or Pier.

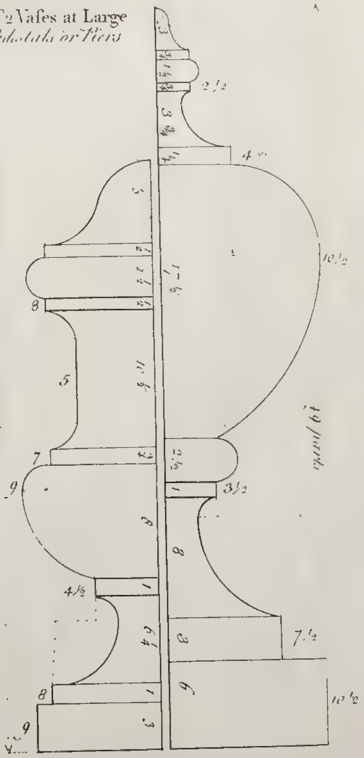

parts
2⅓
12
1⅓

A Parabolick head for Post or Pier.

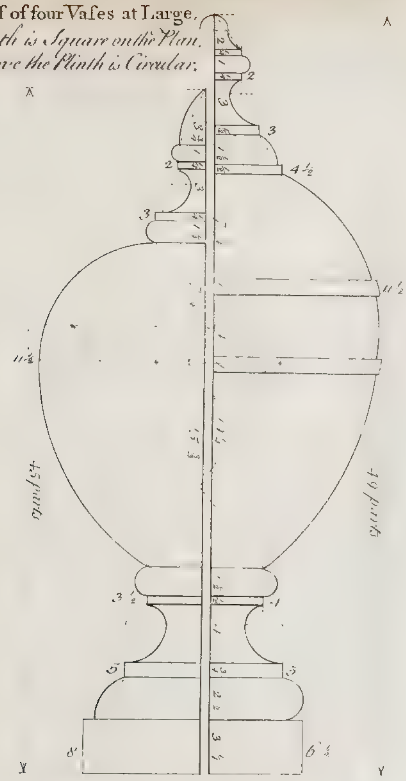

parts
18
2¼
3½
3¾
1½
2

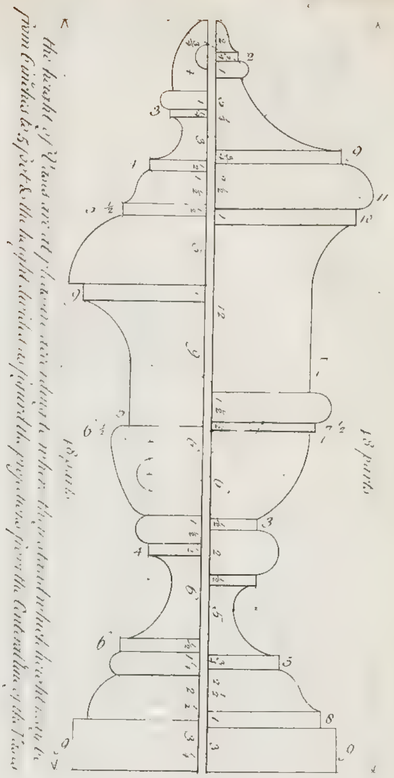
Octagon head for Post or Pier.

The half of 2 Vaſes at Large
to ſtand on Pedeſtals or Piers

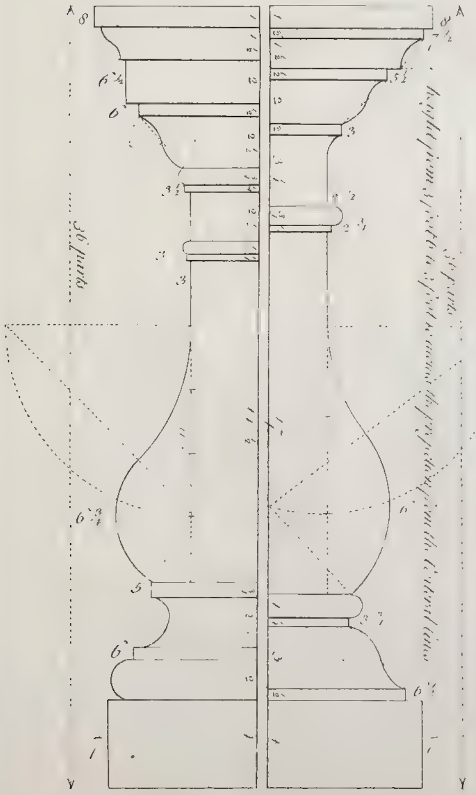

2½
4
10½
17½
8
5
10½
7
9
39 parts
49 parts
3½
8
4½
7½
8
9
10½
6
3

The half of four Vaſes at Large,
the Plinth is Square on the Plan,
& all above the Plinth is Circular.

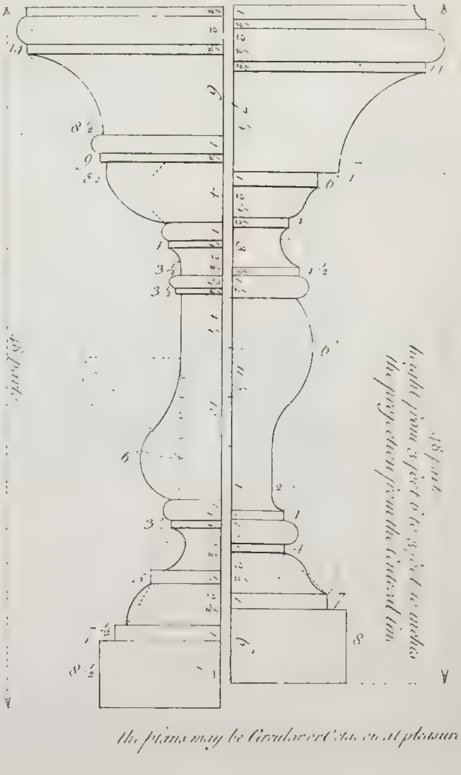

45 parts
49 parts
2
3
4½
11½
11¼
3½
4
5
5
8
6½


the height of Vases are at pleasure are always to where they are placed which height may be from 6 inches to 5 feet & the height divided as figured the projections from the Central line of the Vase
13 parts
13 parts
9
11
10
9
7½
6½
3
4
6
5
8
9

the half of two Pedeſtals for Sun Dials

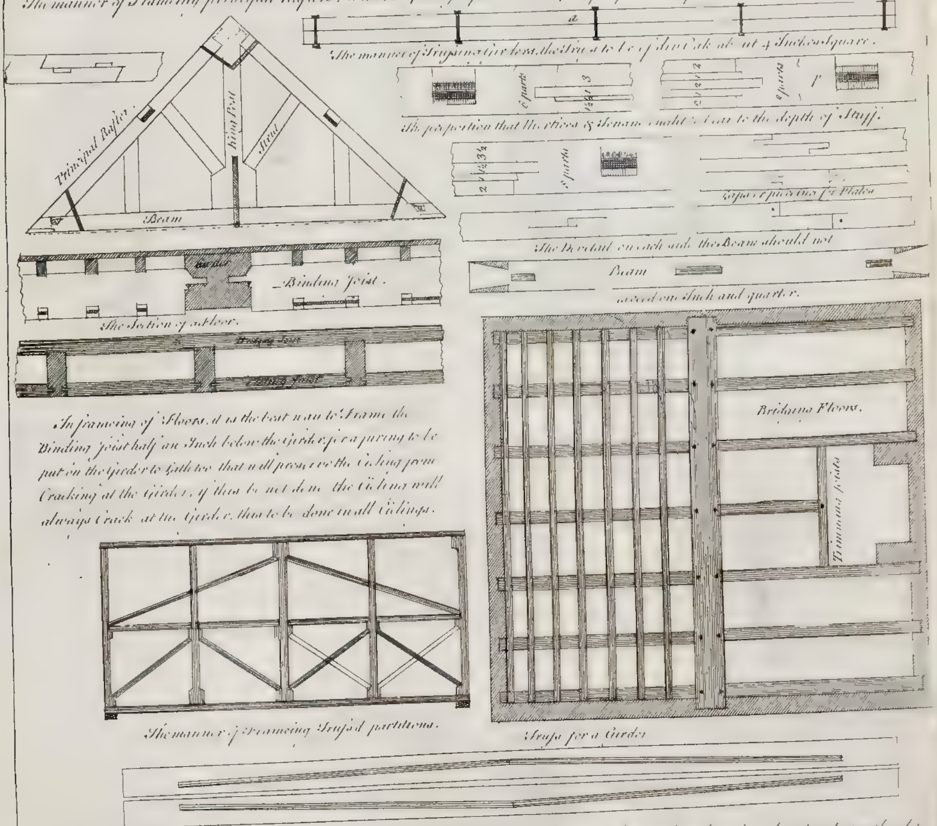

36 parts
38 parts
height from 3 feet to 4 feet 6 inches the projections from the Central line
8
8
7½
6¼
5½
6
3
3½
2¾
3
6¾
6
5
6
6½
7
7

the half of two Fonts for Churches


48 parts
48 parts
height from 3 feet to 3 feet 10 inches the projections from the Central line
11
11
8½
7
6
3½
3½
4½
6
6
3
7
8
8½

the plans may be Circular or Octagon at pleasure

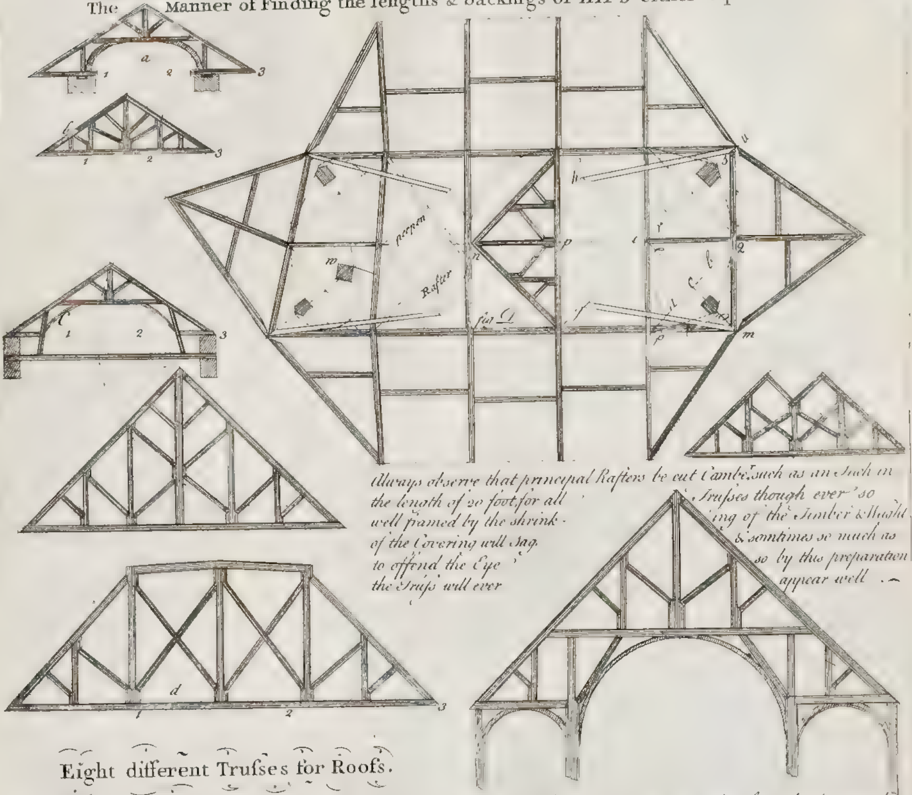
The manner of Framing principal Rafters, Floors & Truss partitions, & the proportion of Mortice and Tenons


a
The manner of Trussing Girders, the Truss to be of dry Oak about 4 Inches square.
6 parts
3
1½ 1
2 1 2 1 2
6 parts
p
The proportion that Mortices & Tenons ought to bear to the depth of Stuff.
2 ½ 1½ 3½
5 parts
Scarf or piecing for Plates
Principal Rafter
King Post
Strut
Beam
The Dovetail on each side the Beam should not
Beam
exceed one Inch and quarter.
Girder
Binding Joist.
The Section of a Floor.
Bridging Joist
Ceiling Joist
Bridging Floors.
Trimming Joists
The manner of Framing Truss'd partitions.
Truss for a Girder

In framing of Floors, it is the best way to Frame the Binding Joist half an Inch below the Girder, for a furring to be put on the Girder to Lath too that will preserve the Ceiling from Cracking at the Girder, if this be not done the Ceiling will always Crack at the Girder. this to be done in all Ceilings.

It may be observed that all Case bays, in Floors or Roofs, should not exceed twelve feet in their length or bearing, but rather let the bearing be 8, 9 or 10 feet: In Bridging floors, do not place the binding Joist above 3, 4 or 5 feet apart, & that the Bridging or common Joist are not above 10 or 12 Inches apart, great care must be taken in letting in the Truss into the Girders that they have their true bearing & well screw'd together with Screw bolts as in a, then they will answer their intended use, it is a very good way to cut Girders or Beams if they are of a short length, half an Inch Camber in 10 feet length, or one Inch in twenty feet length, to prevent the Sagging & indeed Girders of the greatest lengths, although Truss'd, should be cut Camber in the same manner.
The Dovetail on each side the Beam should not exceed one Inch & quarter, is the depth of the Cogging in the Plate, one Inch is the ...
The proportion of Tenons mark'd p, is for principal Rafters, or partitions, the other two for binding Joists or any other bearing uses requir'd

The Manner of Finding the lengths & backings of *HIPS* either Square or Bevil.

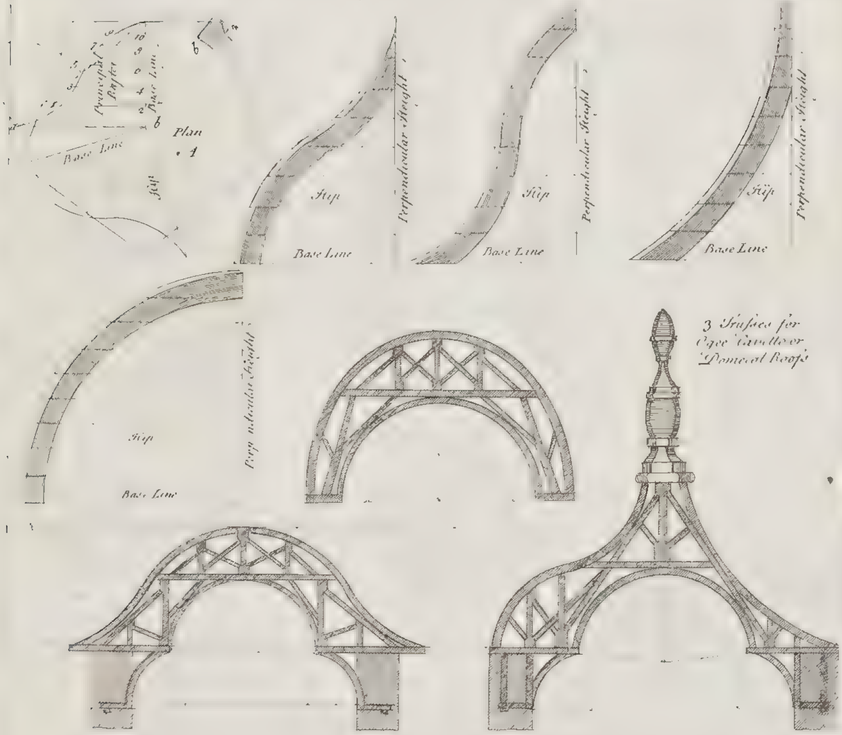


Always observe that principal Rafters be cut Cambe: such as an Inch in the length of 20 foot, for all Truſses though ever so well framed by the shrinking of the Timber & Weight of the Covering will Sag & somtimes so much as to offend the Eye so by this preparation the Truſs will ever appear well.

Eight different Truſses for Roofs.

Them marked a b c d the Perpendicular height is one third of the Base, or Spand, the other four the Perpendicular height is half the Base or Spand, figure D. is a Plan for a Roof, Shewing the manner of finding the Lengths and Backing of hips in any case, Square or Bevil, with the Sides and Ends layd out in Ledgment. To find the Length of the hips Draw the diaganal Lines o e and r s. then take the Perpendicular height of the principal Rafter n p and set it at Right angles with the Base Lines i g. and i h, then draw the Lines h u. and g m. which will be the Length of the hips. To find the Backing of the hips draw the Line a c b at Right angles with the Base Lines o e and r s, then ſet one foot of the Compaſses in the Center C. and with the other foot touch the nearest point of the hip Back, as at t, then draw the arch Line e.e, then from the point C draw the Lines C p and C 2, which is the Backing of the hips. and this Rule will do in any case as is plain by inspection of the plan, at the bevil End, and to back a Valley the mold must be reverst as at w, and the valley a square peice layd diaganal ways &c.

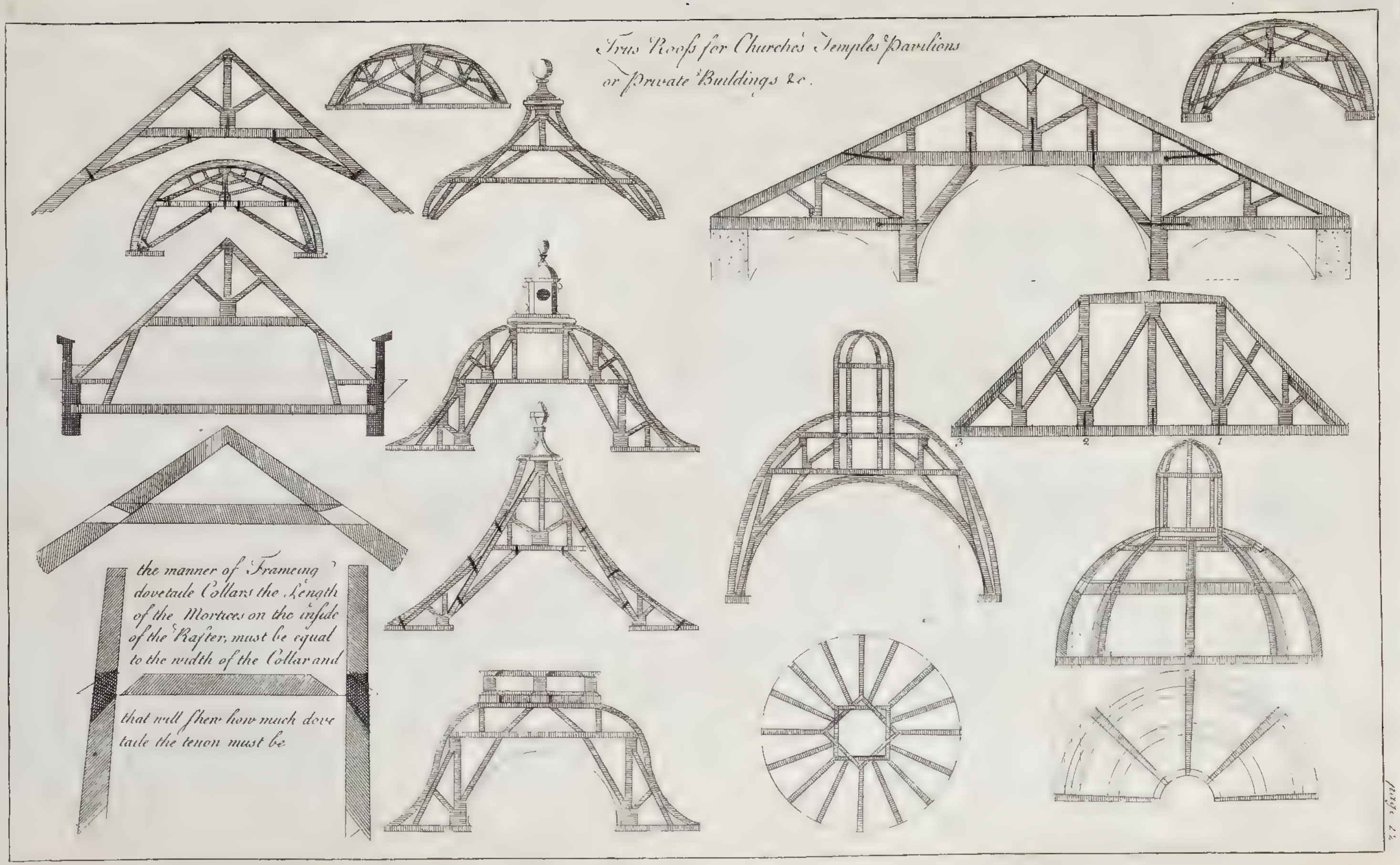
Backing of Curve Line Hips.



1
2
3
4
5
6
7
8
9
10
b
Principal Rafter
Base Line
Plan
A
Base Line
Hip
Hip
Perpendicular Height
Base Line
Hip
Perpendicular Height
Base Line
Hip
Perpendicular Height
Base Line
Hip
Perpendicular Height
Base Line
3 Trusses for Ogee Cavetto or Domical Roofs

Concerning Ogee Roofs, Cavetto Roofs & Domes, is the manner of finding the length of the Hips & their backing. The Plan A. is a Pentagon, & to back the Hip, put down the Plan or bigth of the Hip at the bottom, at any Angle of the Plan as at b. then take the distance 1.2. from the Plan of the Hip. & set the same distance from the back of the Hips, on the dotted lines, that are drawn parallel to the base line of the Hips, then tack in nails, & bend a thin Rule true to the Nails, & mark as that Curve directs & that will give the backing for any Curve line hip on any Angle required — always divide the perpendicular height into a number of equal parts, & draw them parellel to the Base lines to set on the backing. To find the length & Curve of the Hip agreeable to the Rafter in the Plan, divide the Base line of the principal Rafter into a number of equal parts, & draw the lines up to the Curve or back of the Rafter, then divide the base line of the Hip, into the same number of parts & draw up the ordinals or lines square from the base line of the Hip then take the ordinals from the principal Rafter, as a. b. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. & put the same height on the ordinals of the Hip tack in Nails & bend a thin Rule, then mark as that Curve directs, which will be the Curve of the Hip, & this Rule will do for any Curve line Hip, at any Angle, when traced from the Rafter.

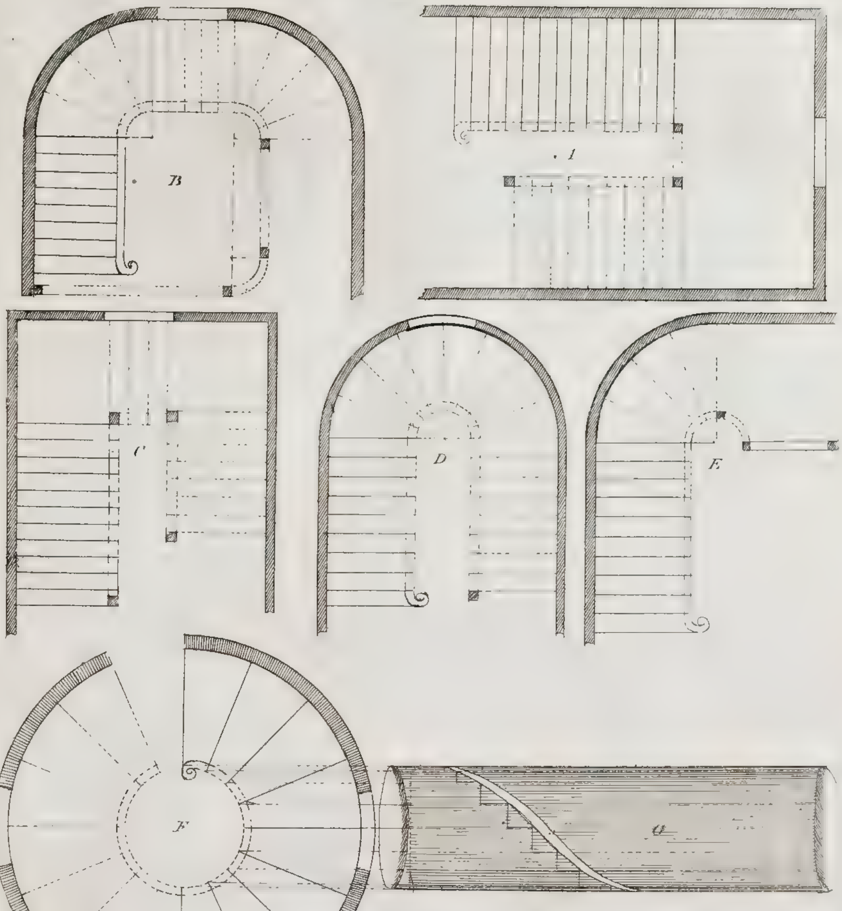
Trus Roofs for Churches, Temples, Pavilions or Private Buildings &c.



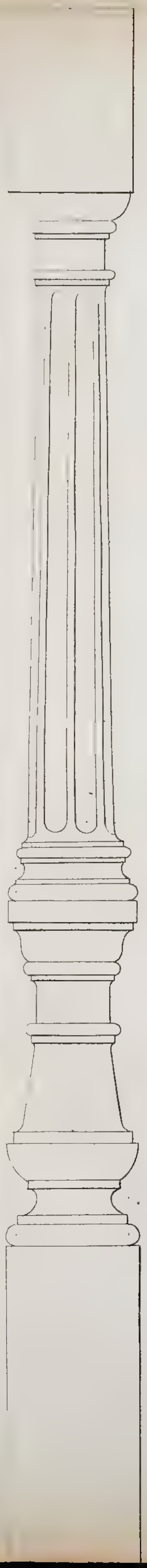
the manner of Frameing dovetaile Collars the Length of the Mortices on the inside of the Rafter, must be equal to the width of the Collar and that will shew how much dove taile the tenon must be

Plans for Stairs.

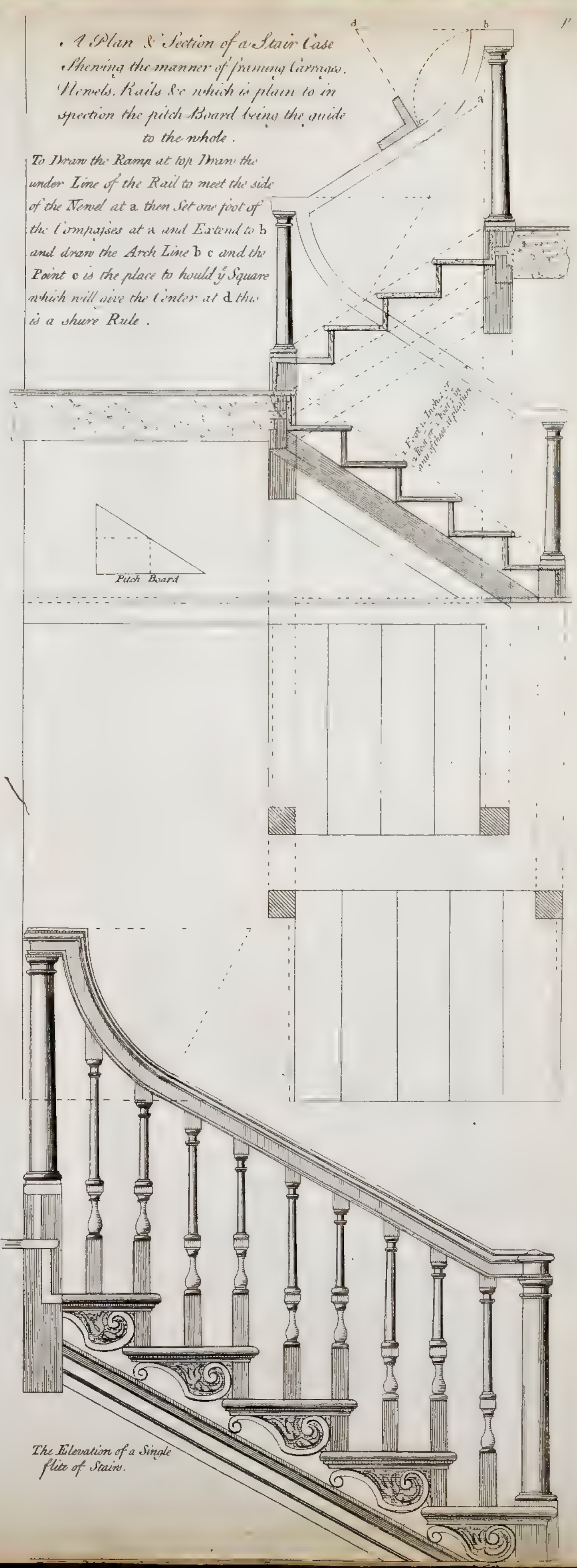
plate 3



Six Plans for Stair cases, and that of F is a circular Plan & G is a Templet to Glew the Twist rail upon which is to be made true to the opening of the Hand-rail then draw the Rise & Tread on the Templet or Cylinder then bend a thin Rule to touch the points or nosings of the Steps, & mark it by, & that will be under Edge of the Rail, then set on the depth of the Rail parallel, then prepare the thickneſs of Wood to be bent & glew'd on ye Cylinder or Templet, & when there is thickneſs enough to make the breadth of the Rail the other way when glew'd on ye Templet, the Rail will come off ready squar'd, & if the Rail ramps in the twisted part (as it often does) this is a safe and sure way to be done on the Templet, and the Ramps laid down on the Templet by the Intersection of right lines as in page 26 Figure F.



Banister at Large if the Banister be fluted divide the Round into 32 parts give 8 to a flut and one to a fillet and if the Newel be fluted divide ye Round into 48 parts 3 to a flute. and one to the Fillet



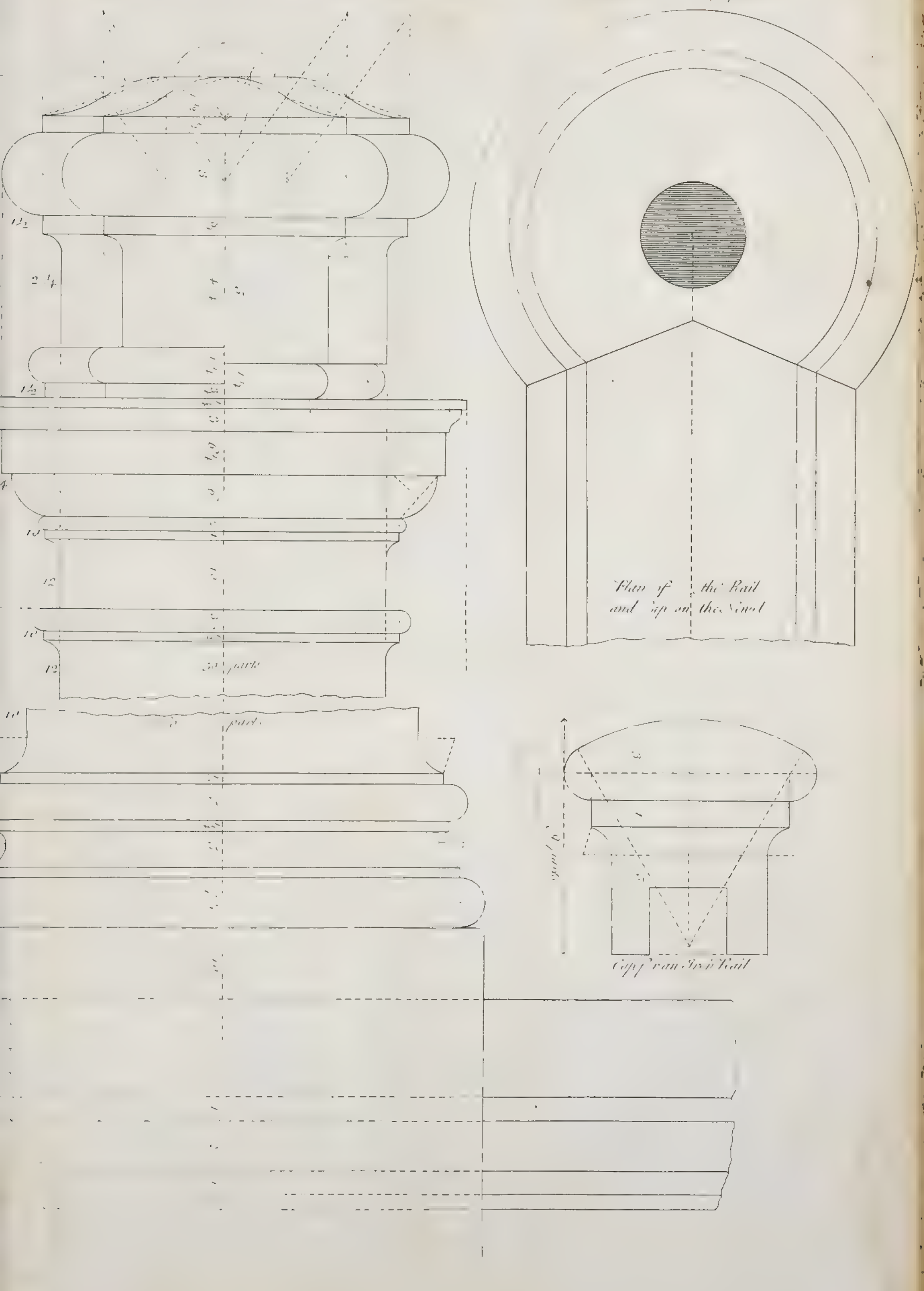
A Plan & Section of a Stair Case Shewing the manner of framing Carrages, Newels, Rails &c which is plain to inspection the pitch Board being the guide to the whole.

To Draw the Ramp at top Draw the under Line of the Rail to meet the side of the Newel at a then Set one foot of the Compasses at a and Extend to b and draw the Arch Line b c and the Point c is the place to hould ye Square which will give the Center at d this is a shure Rule.

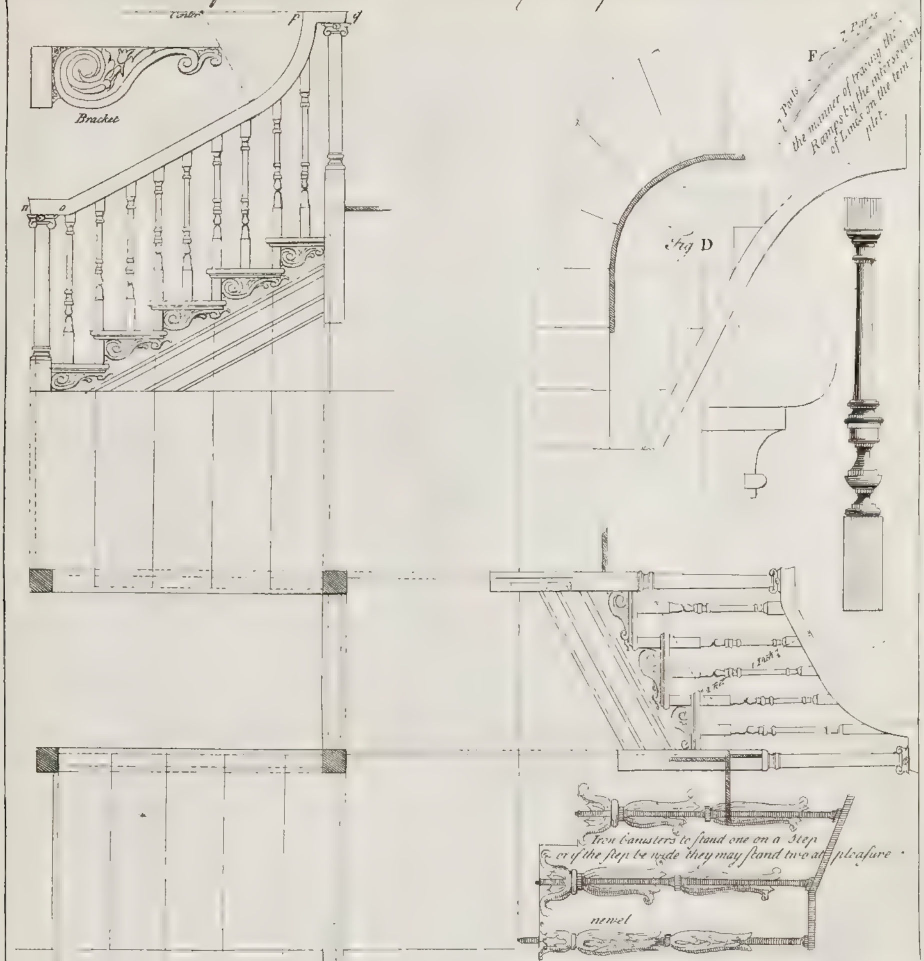
d
b
a
c
1 Foot 12 Inches or
2 Feet or 2 Feet 6
any of these at pleasure
Pitch Board

The Elevation of a Single flite of Stairs.

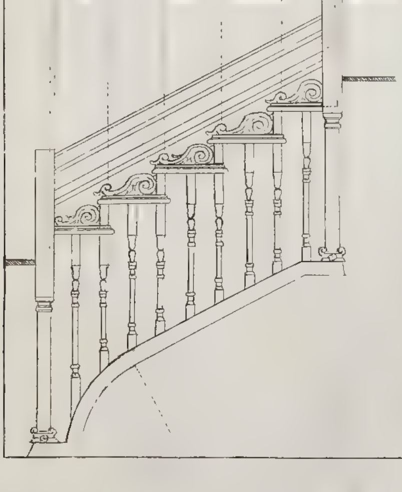
Molding at large for Bracket Stairs for the Newel and hand Rails.


1½
2¼
1½
4
13
12
10
12
10
50 parts
5 parts
Plan of the Rail and Cap on the Newel
3
9 parts
Cap of an Iron Rail

The Plan & Elevation of a Bracket Stair Case, with the Mold for a Ramp & Twist Rail on a Quarter Winders


Center
p
q
Bracket
n
o
F
2 Parts
2 Parts
the manner of tracing the Ramps by the intersection of Lines on the templet.
Fig D
newel

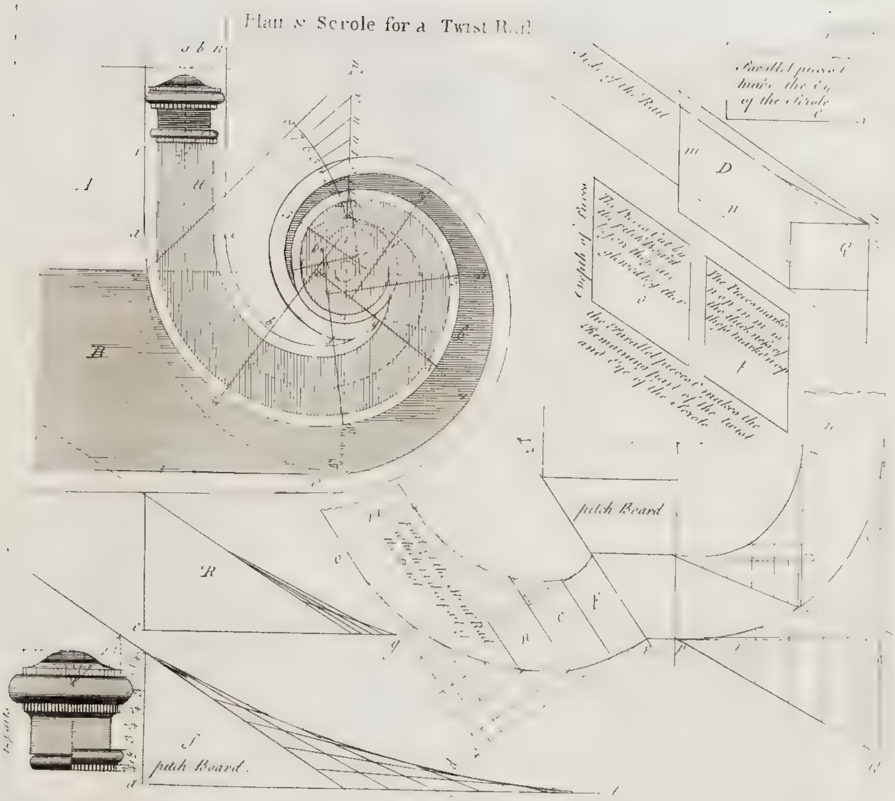
Iron banisters to ſtand one on a Step or if the ſtep be wide they may ſtand two at pleaſure.



A flight of Bracket Stairs. Shewing the manner of the Ramp & Knee and Height of the Hand Rails. The manner of Framing the Strings, Rails & Newels, agreeable to the Steps with the length of the Knees. The length of the knee m o, is equal to the length p q. Fig D, is the manner of tracing the Mold for a Ramp & twist Rail in a quarter Sweep. First make a Templet as the black part at the ends of the Steps, then draw the Rise & Tread of each Step on the Templet, then Trace the Mold exactly on the Templet to cut the thickneſs by and the Rail must be glewd on the Templet.

This is a very safe & sure Way. for the Raile Comes of the Templet Ready ſquard

Plan & Scrole for a Twist Rail



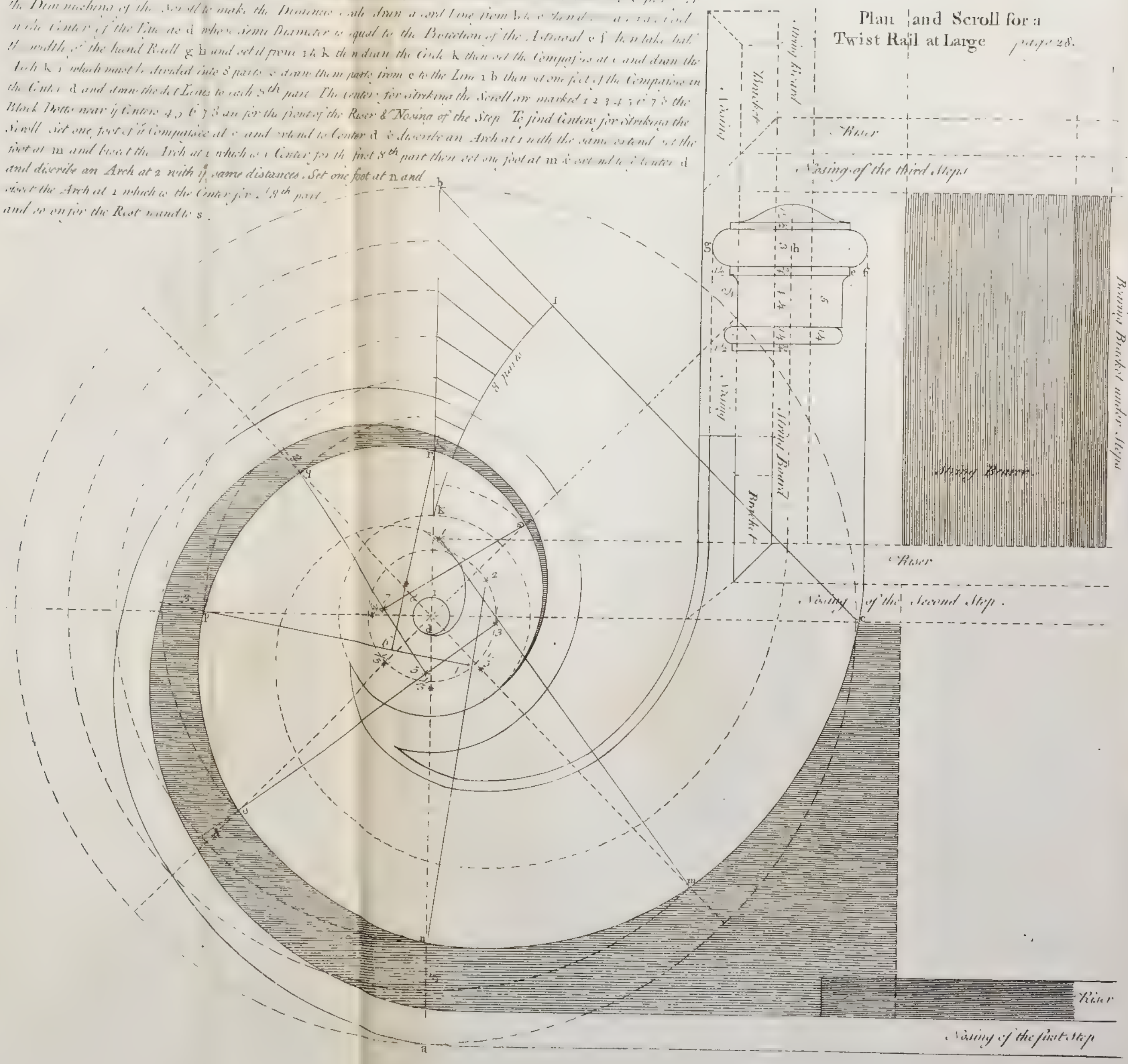
A
B
D
Q
R
S
F
U
m
n
Side of the Rail
Parallel pieces to make the Eye of the Scrole
The Pieces Cut by the pitch Board & Join'd they are
The Pieces marks
the parallel pieces makes the twist and Eye of the Scrole
Length of Raking
pitch Board
pitch Board.

The manner of Striking the Plan, and Scrole for a Twist Rail. A and B is two steps of Stairs, U is the Plan of the hand Rail, and the Twist begins at a c on the second step of the Stairs. To make the Scrole, strike a Circle equal to the Breadth of two Stairs A B then divide the Circle into 8 parts, and draw the dotted Lines in the Circle, then draw the small Circle in the Center, equal to the projections of the Astragal on the hand Rail, then take half the breadth of the Rail, as 1 2 and add to the small Circle as the dotted Lines which is the compass of the Eye; then draw the Line 2 y then to make the diminishing Scale, set the Compasses at 2 and describe the Arch Line 1 8. divide it into parts that will be the diminishing Scale — which the parts are drawn to the Line p y then set the Compasses in the Center, and take distance to on the Scale, turn over to 2 on the outside of the Rail, then take w and turn over to 3, and so on for the rest, which will diminish the Scrole, the next thing is to trace a Raking Mould for the Squaring the twisted part of the Rail as m, which is traced from the plan U that is as with to the plan U then divide the two Arch Lines of the plan U into a number of Equal parts, draw the dotted Lines to the point of Bisection which will be in the Arch Line, then draw the Lines 1 2 & 3 4 at pleasure, then draw 4 5 to the Rake of the Pitch Board, then draw the Line 5 6 which gives the length of the Raking for the twisted part of the Rail then draw the Line 7 8 then take the distances 6 7 or 5 8 and make the Line p 7 then drop the dotted Line f Q and that will be the divisions of the Line 1 7 then the parts on the Line 1 2 is equal to the 7 8. then draw the dotted lines cross each other and tack nails in the Bisections and Bend a thin Rule and mark it by, that will be the Curve of the Raking Mould, the inside Curve is done in the same manner, then to find the Centers in the Eye take the distance from the Center to y set one foot of the Compasses and touch the point a, with the same opening set one foot at 2 and Bisect at a then take from the Center to 3 and from feet at 2 and touch point b with the same opening set one foot in 3 and Bisect b and so on for all the Centers in the eye. To apply the Raking Mould m to the Rail D. set the Line 5 6 on m to the Line m n D as the Pitch Board gives it on the under and upper sides the Moulds R S gives the falling of the twist and the Line a b is taken from the Arch Line on the plan U as a b and c g from the plan U and 3 d in the Mould S to the Mould is intended to be glewed on the top of the Rail as 3 d in Q but the most part will come off in squaring to strike one in Side of the Scrole in w the first part from c to b from b to d from d to a which is plain that all the parts meet at the black Lines that come from the Centre to the out Side of the Rail. 2 3 4 5

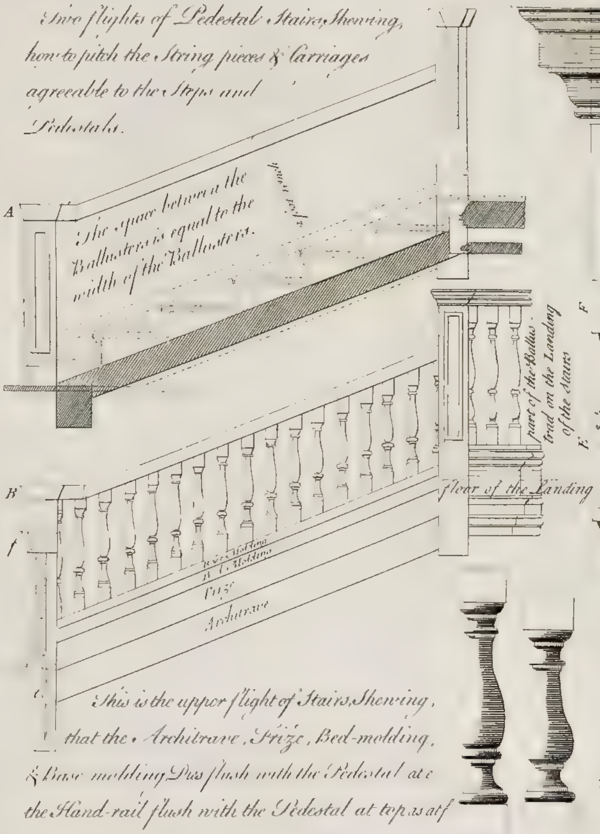
Plan and Scroll for a Twist Rail at Large

page 28.

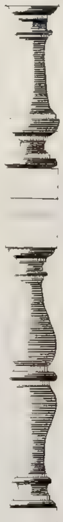
To Draw the Scroll Draw a Circle equal to the Breadth of two Steps as a b then divide [illegible] the Diminishing of the Scroll to make the Diminishing Scale draw a Cord Line from b to c extend [illegible] with the Center of the Eye as d whose Semi Diameter is equal to the Projection of the Astragal e f then take half the width of the hand Raill g h and set it from 1 to k then draw the Circle k then set the Compasses at c and draw the Arch k i which must be divided into 8 parts & draw them parts from c to the Line 1 b then set one foot of the Compasses in the Center d and draw the dot Lines to each 8th part The Centers for striking the Scroll are marked 1 2 3 4 5 6 7 8 the Black Dotts near ye Centers 4 5 6 7 8 are for the fronts of the Riser & Nosing of the Step To find Centers for striking the Scroll Set one foot of ye Compasses at c and extend to Center d & describe an Arch at 1 with the same extend set the foot at m and bisect the Arch at 1 which is a Center for the first 8th part then set one foot at m & extend to ye Center d and describe an Arch at 2 with ye same distances. Set one foot at n and bisect the Arch at 2 which is the Center for 2 8th part and so on for the Rest round to 8.

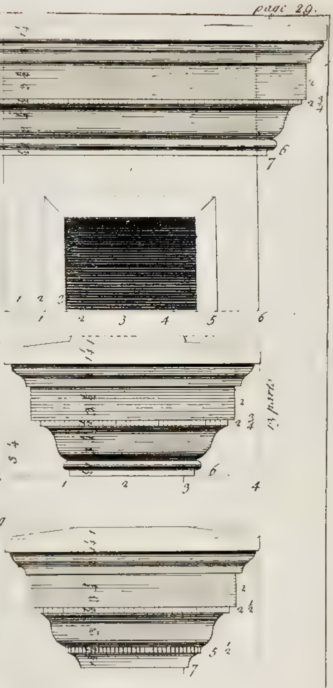

String Board
Bracket
Nosing
Riser
Nosing of the third Steps
8 parts
String Board
Bracket
Nosing
String Board
Bearing Bracket under Steps
Riser
Nosing of the Second Step
Riser
Nosing of the first Step
a
b
c
d
e
f
g
h
i
k
m
n
o
p
q
1
2
3
4
5
6
7
8

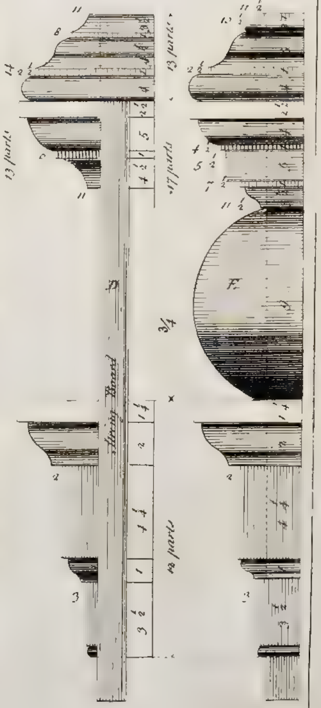
Two flights of Pedestal Stairs, Shewing, how to pitch the String pieces & Carriages agreeable to the Steps and Pedestals.


D
A
The space between the Ballusters is equal to the width of the Ballusters.
part of the Ballustrad on the Landing of the Stairs
E
F
3 ¼
Floor of the Landing
B
f
Base Molding
Bed Molding
Frize
Architrave

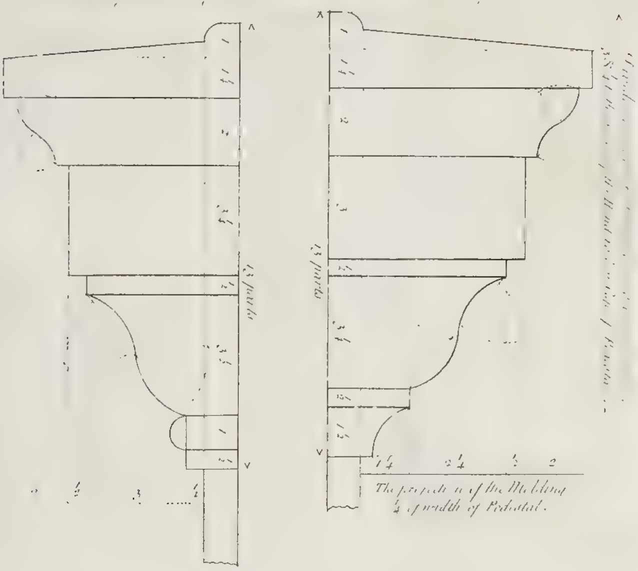
This is the upper flight of Stairs, Shewing, that the Architrave, Frize, Bed-molding, & Base molding Lies flush with the Pedestal at e the Hand-rail flush with the Pedestal at top as at f the bottom part of the Rail, at the Knee, the Cap going round the Pedestal as at A & B. The way to proportion the Moldings by the Pedestal. The Pedestal is one eighth part of the length of the Step, then divide the Pedestal in Six parts give 3 & ¼ to the depth of the Hand-rail as E.F. the width of the Rail, the same as the Pedestal. The height of the Base-molding is two parts of the width of ye Pedestal. The Bed-mold in D. is two parts, the Bed-mold in E. is two parts & a half, the width of the Architrave is equal to the width of the Pedestal, & the Frize ¾ of the Architrave, the projection of the Moldings to Hand-rails ¼ of the Pedestal, the Base-mold & Bed mold the same, when the length of the Step is more than 4 foot, for every foot must be added ¾ of an Inch, to the width of the Pedestal, and divide the Pedestal as before for the Grose measures of the Molding



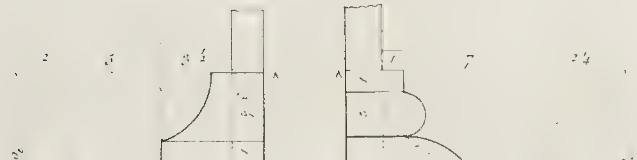

2 ¾
6
7
1
2
3
4
5
6
F
13 parts
2
2 ½
6
1
2
3
4
2
2 ½
5 ½
7


11
6
2 ½
13 parts
13 parts
17 parts
D
E
String Board
¾
12 parts
2
3
4
5
7
11

Moldings at Large for Pedestal Stairs. — Page 30


1
1¼
2
3½
½
3½
1
1½
13 parts
2
3
3½
1¼
2¼
3
2
3
¼

The projection of the Molding ¼ of width of Pedestal.


2
3
3½
7
2¼
1
1½
1
4½
1
4
2½
4
1
3½
5½
4¼
2½
5¼
4½
27 parts
31 parts
⅛ of the Pedestal
⅙ of the Pedestal
5¼

The manner of describeing Centers for Moldings.

the Corinthian modillian

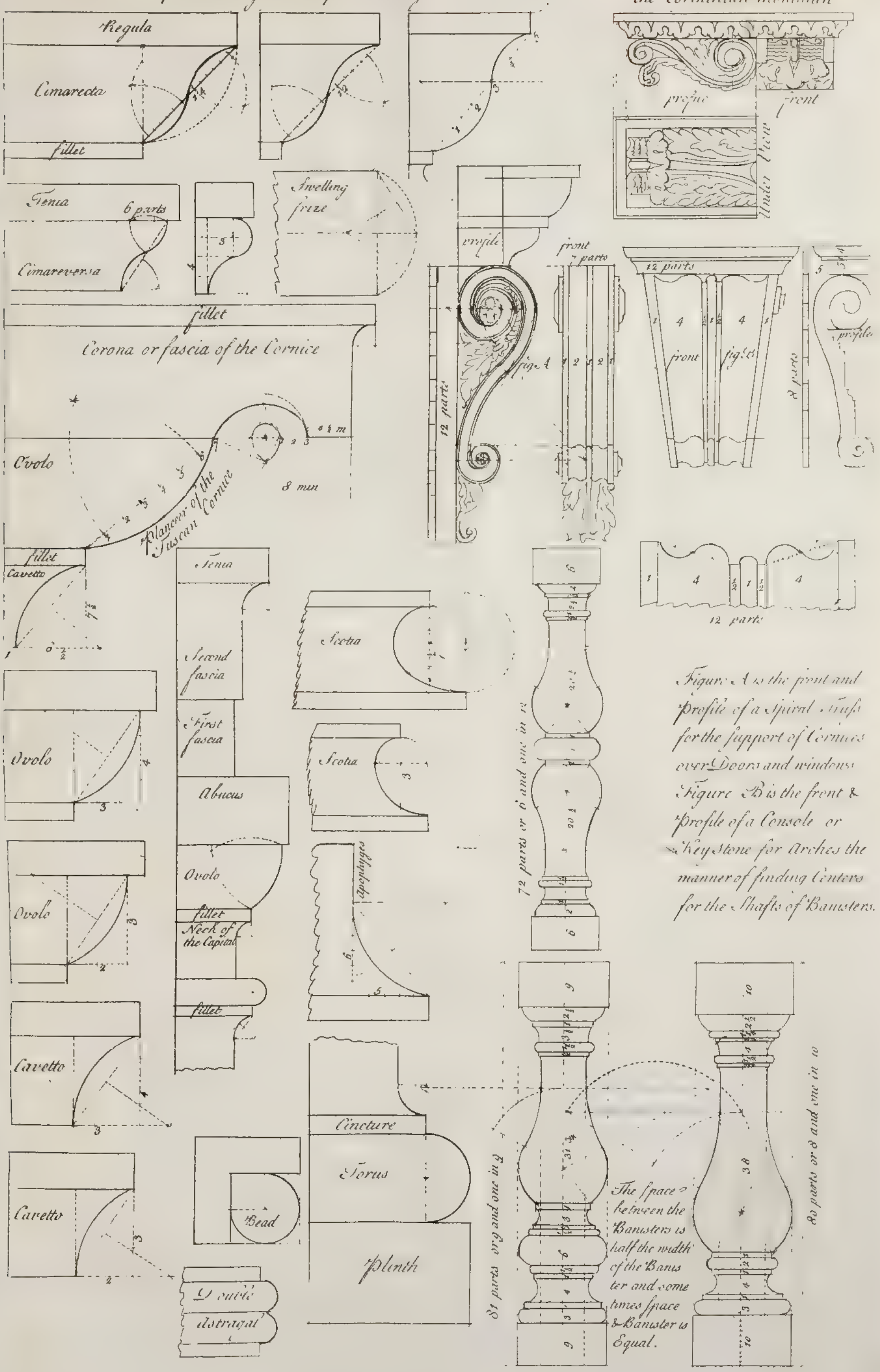
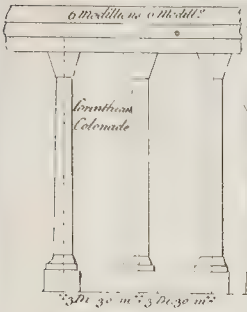

Regula
Cimarecta
fillet
Tenia
6 parts
Cimareversa
Swelling frize
fillet
Corona or fascia of the Cornice
Ovolo
Planceer of the Tuscan Cornice
8 min
fillet
Cavetto
Tenia
Second fascia
First fascia
Abucus
Ovolo
fillet
Neck of the Capital
fillet
Scotia
Scotia
Apophyges
Cincture
Torus
Bead
Plinth
Double astragal
Ovolo
Ovolo
Cavetto
Cavetto
profile
front
Under View
profile
front
7 parts
fig. A
12 parts
12 parts
front
fig. B
8 parts
profile
12 parts
72 parts or 6 and one in 12
81 parts or 9 and one in 9
80 parts or 8 and one in 10

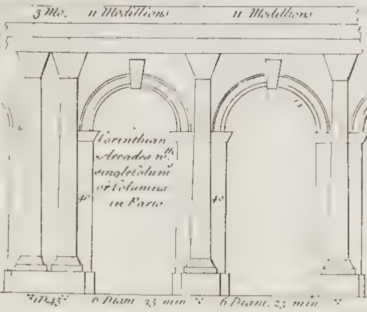
Figure A is the front and profile of a Spiral Truss for the support of Cornices over Doors and windows. Figure B is the front & profile of a Console or KeyStone for Arches the manner of finding Centers for the Shafts of Banisters.

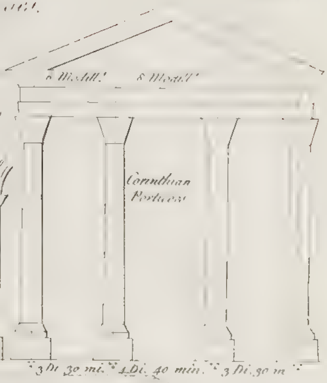
The space between the Banisters is half the width of the Banister and some times space & Banister is Equal.

Intercolumnations for Colonades, Arcades, and Porticos.

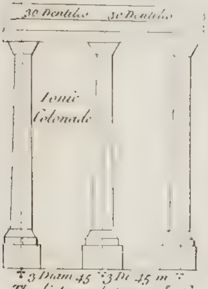
True regard must be had to the Number of Triglyphs, Dentiles, & Modillions, between the Centeral Lines of Columns.

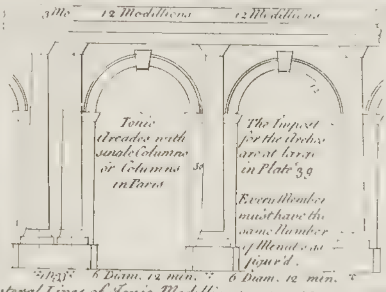

6 Modillions
6 Modill.s
Corinthian Colonade
3 Di. 30 m.
3 Di. 30 m.

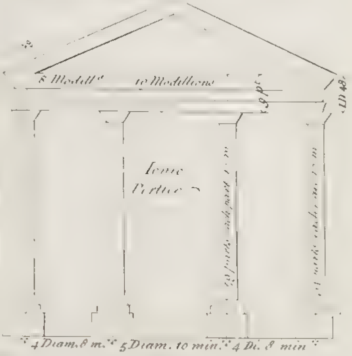

3 Mo.
11 Modillions
11 Modillions
Corinthian Arcades with single Column or Columns in Pairs
40
40
1 D. 45
6 Diam. 25 min.
6 Diam. 25 min.


6 Modill.s
8 Modill.s
Corinthian Portico
3 Di. 30 mi.
4 Di. 40 min.
3 Di. 30 m.

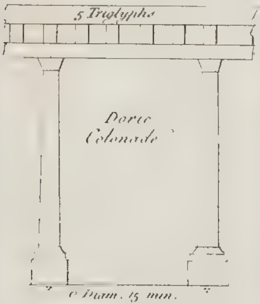
The distance between the Centeral Lines of the Corinthian Modillions is 35 minutes, the breadth of the Modillions is 11 minutes & ½, the Interval between ye Corinthian Modillions is 23 minutes & ½.

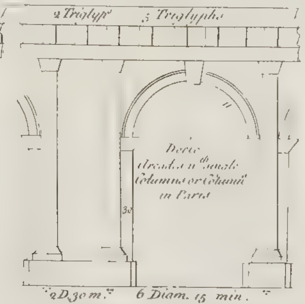

30 Dentiles
30 Dentiles
Ionic Colonade
3 Diam 45
3 Di. 45 m.

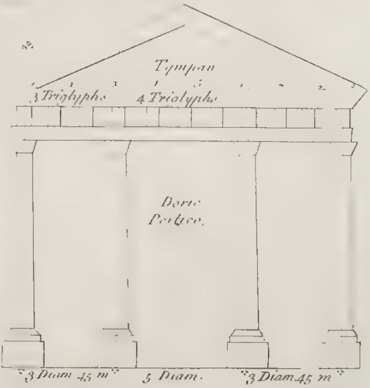

3 Mo.
12 Modillions
12 Modillions
Ionic Arcades with single Columns or Columns in Pairs
30
The Impost for the Arches are at large in Plate 39
Every Member must have the same Number of Minutes as figur'd.
1 D. 33
6 Diam. 12 min.
6 Diam. 12 min.


6 Modill.s
10 Modillions
Ionic Portico
4 Diam. 8 m.
5 Diam. 10 min.
4 Di. 8 min.

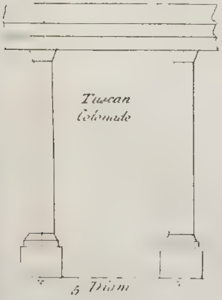
The distance between ye Centeral Lines of Ionic Modillions is 30 or 31 min. the breadth of Modillions is 10 Minutes, the distance between ye Centeral Lines of Dentiles is 7 minutes & ½, the breadth of Dentile 5 min. ye interval between Ionic Modillions is 20 or 21 min. between Dentiles is 2 min. & ½.

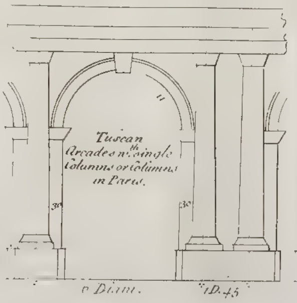

5 Triglyphs
Doric Colonade
6 Diam. 15 min.

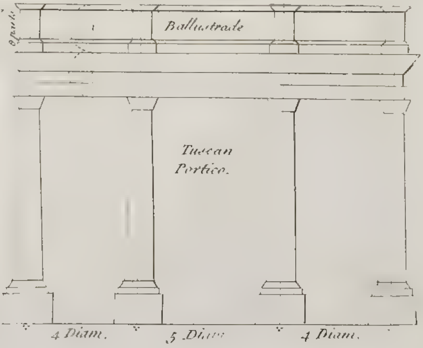

2 Triglyp.s
5 Triglyphs
Doric Arcades with single Columns or Columns in Pairs
30
2 D. 30 m.
6 Diam. 15 min.


Tympan
3 Triglyphs
4 Triglyphs
Doric Portico.
3 Diam. 45 m.
5 Diam.
3 Diam. 45 m.

The distance between the Centeral Lines of Triglyphs is 75 min. the breadth of Triglyphs 30 minutes, the interval between 45 min.

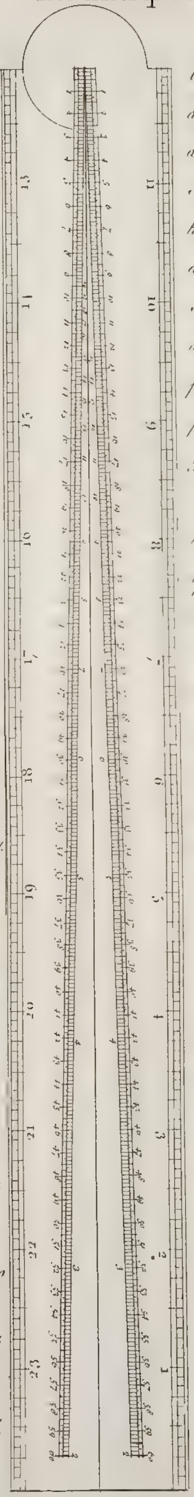

Tuscan Colonade
5 Diam.


Tuscan Arcades with single Columns or Columns in Pairs.
30
30
6 Diam.
1 D. 45


Ballustrade
Tuscan Portico.
4 Diam.
5 Diam.
4 Diam.

The Diſcription & uſe of the Rule

Use of the Rule in dividing y^e Diameter of a Column into Minutes, take y^e Diameter & make it a parallel in 60 & 60 then the parallel distance between 1 & 1 will divide the Diameter into 60 parts or Minutes by the word parallel. I mean a distance taken acroſs from one Leg to ye other, as thus ye Rule being open'd then the extent of ye Compaſses from 30 on one Leg to 30 on the other Leg is a parallel extent. In all parallel extents you must set one point of the Compaſses in the common line on one Leg to the common line on the other Leg, wch common line is that only on the 60 Scale which runs to the Center, in wch the Center pins at 30 & 60 are fixed.



Use of the Rule in dividing a Line into any number of parts under 60 Take the given Line and make it a parallel in the parts on the 60 Scale, into which you would have it divided then the parallel extent, between 1 and 1 shall divide the Line in as many parts as requir'd For Example Let 5 Inches be a Line to be divided into 12 parts, take 5 Inches and make it parallel in 12 and 12 on the 60 Scale, then the parallel distance between 1 and 1 will divide 5 Inches into 12 parts

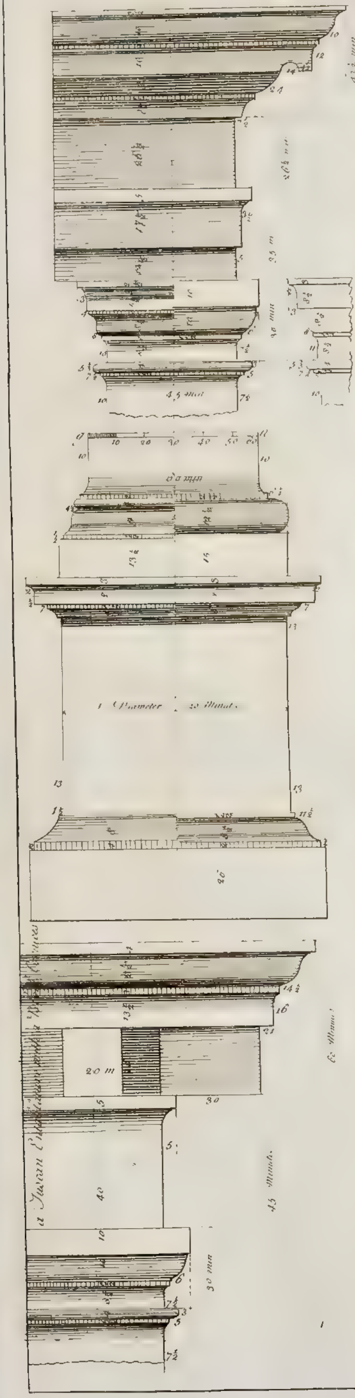
Suppose it is requir'd to divide the height of a Cornice or any other Molding into any number of parts, take the height and make it parallel in the parts on the 60 Scale, as the Cornice or Molding is figur'd, then the parallel distance between 1 and 1 will divide the height into the parts requir'd. Note you may double or tripple the number, and if you make the Line to be divided a parallel in tripple the number you must take out 3 instead of 1 and that will divide the Line into the parts requir'd

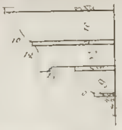
Example.

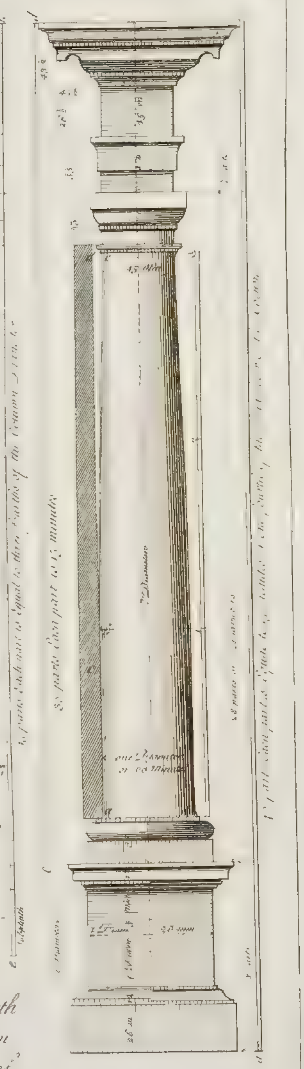
I would have 3 Inches put into 10 parts, take 3 Inches between your Compaſses and make it a parallel in 30 and 30 the tripple of 10 then take out parallel 3 and 3 the tripple of 1 and that will divide the Line given, being 3 Inches into 10 parts exactly. and the like for any other.

The parts on the inside for dividing a Circle make the Diameter a parallel in 2 and 2 then for 5 sides take 5 and 5 and so for any other

The Tuscan Order

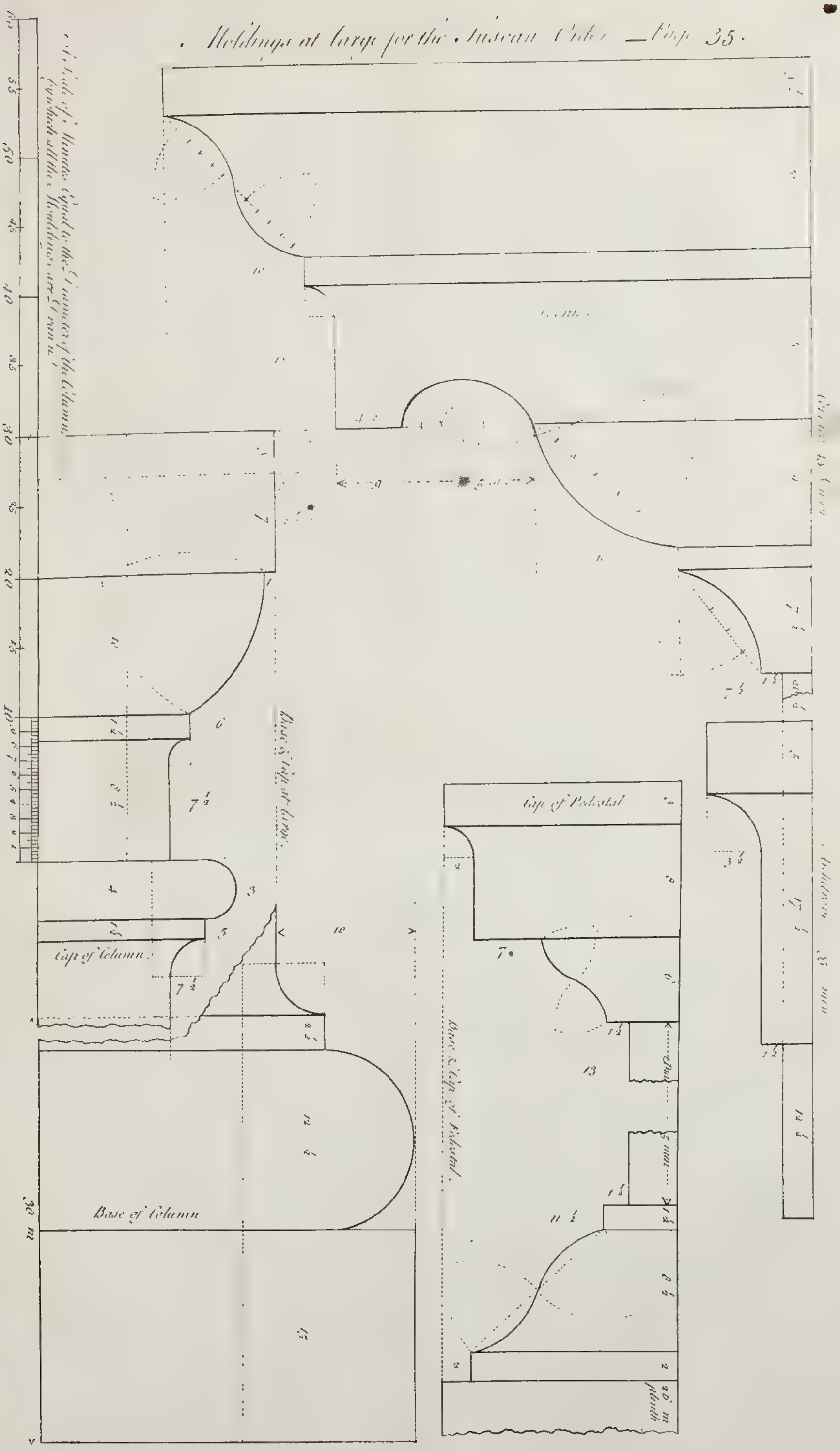




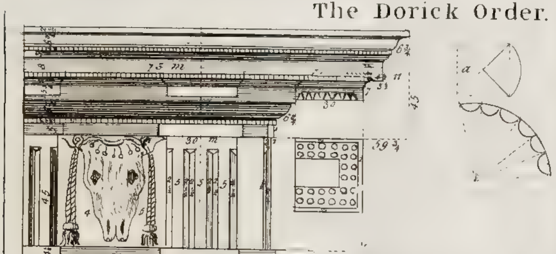


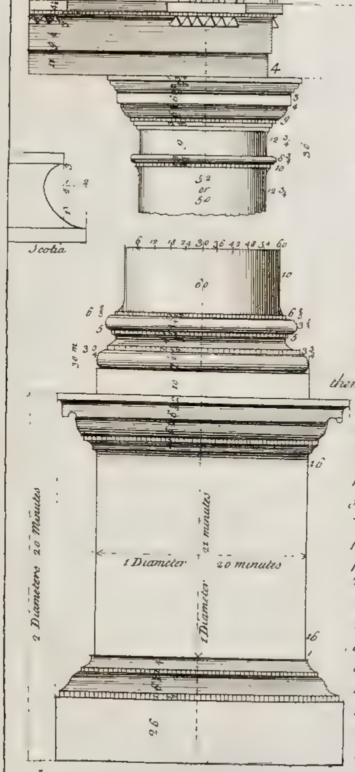
Note the Projections in all the five Orders are set Back from a plum Line. To Proportion the Tuscan Order to any given Height divide a, b, with its Pedestal into 45 parts, each part is equal to 15 minutes, or one fourth of the Diameter of the Column at Bottom; & the Diameter of ye Column at Bottom must be Divided into 60 minutes, in all the orders as ye Scale g. h, at the Bottom of the Column; and those minutes to be diſpoſed to each member as they are figured in Height and projection. To proportion the Column and Entablature with a Subplinth Divide e, f, into 13 parts; each part is equal to three fourths of the Diameter, and one & one third is the Height of the Subplinth, two parts and one third is the Height of the Entablature. To proportion without the pedestal or Subplinth, Divide c, d into 35 parts, each part is equal to 15 minutes or one fourth part of the Diameter; & ſeven of theſe parts is the Height of the Entablature. To Diminiſh all the five Divide the ſhaft into 3 equal parts & Leave the lower part a. b, perpendicular, b. c, The two thirds that Diminiſh, c the point of the Diminution, e the Diminution board then Draw the dotted Line b, d and set on the Diminution d c then tack in nails at a b & c bending a thin Rule to touch the three points, mark as that Curve directs which will be the Diminution but hold the thin Rule true to a b. the Rule not to be leſs then ½ an inch or 3/8 of an inch in thickneſs for if it is to thin it will not bend so true to the Curve as when it has a moderate ſpring.

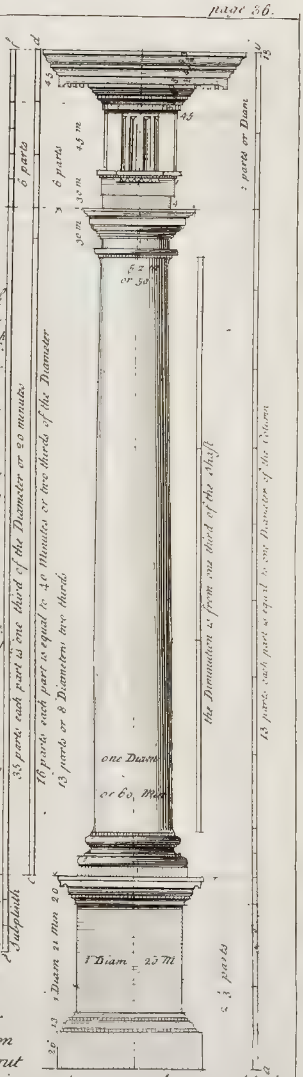
Moldings at large for the Tuscan Order — Fig. 35.


A Scale of Minutes equal to the Diameter of the Column by which all the Mouldings are drawn
Cornice 43 min
Architrave 35 min
Base & Cap at large
Cap of Column
Base of Column
30 m
Cap of Pedestal
Base & Cap of Pedestal
26 m plinth
7 1/2
6
4
3
5
10
7
13
11 1/2
8 1/2
12 1/2
15

The Dorick Order.

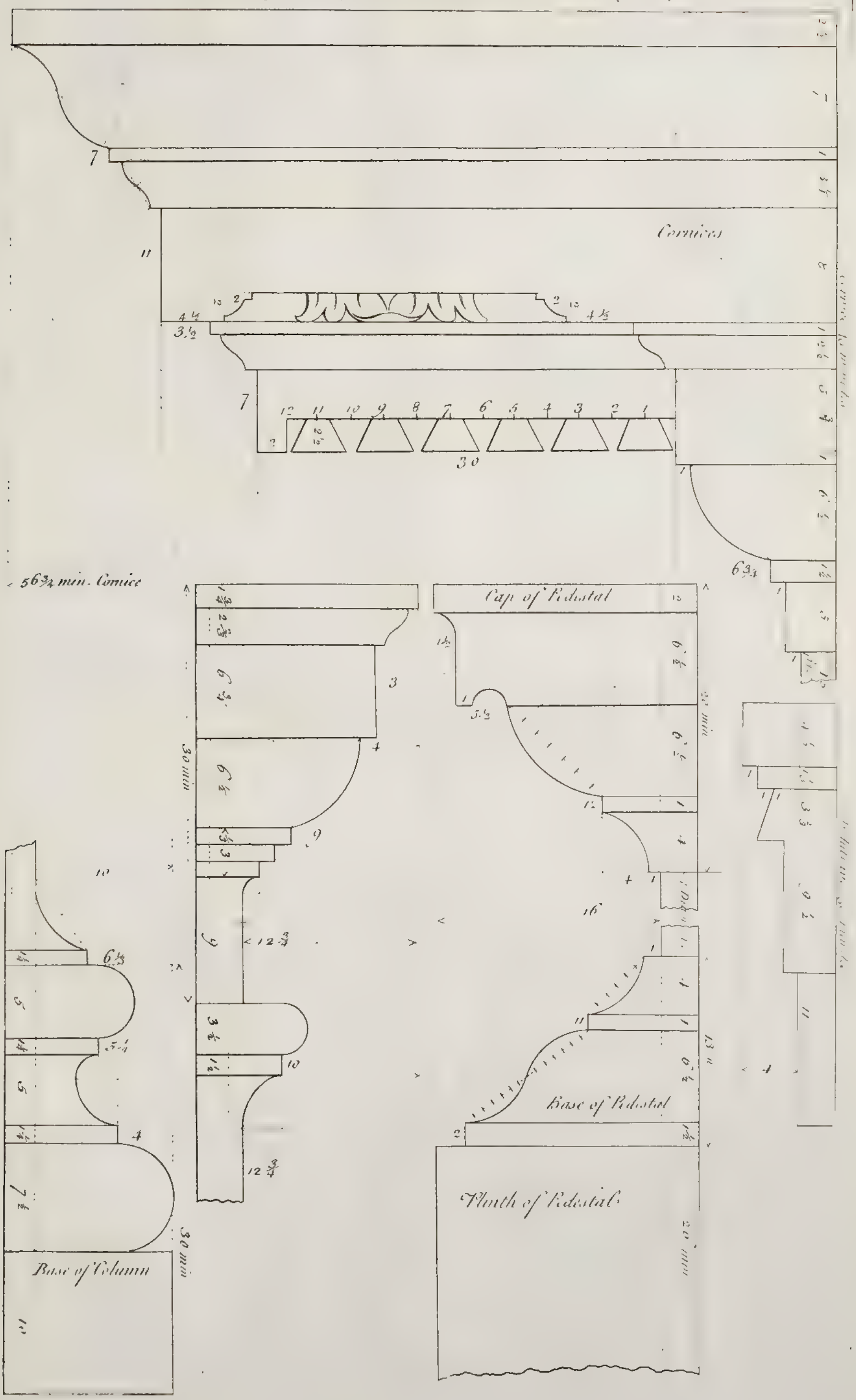

15 m
30 m
45
33
59 ¾
6 ¾
a


4
52 or 50
Scotia
6 12 18 24 30 36 42 48 54 60
60
30 m
1 Diameter
20 minutes
21 minutes
1 Diameter
2 Diameters 20 Minutes
16
26

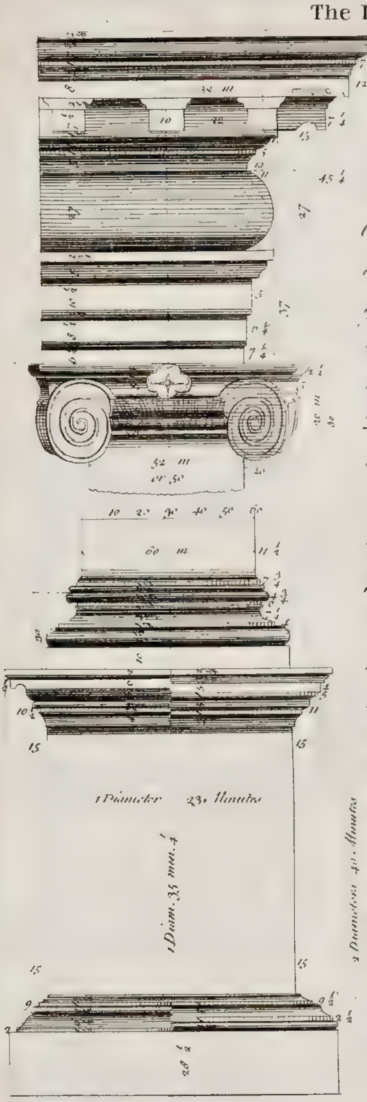

6 parts
45
45 m
30 m
52 or 50
one Diameter or 60 Min
1 Diam 25 m
1 Diam 21 Min 20
35 parts each part is one third of the Diameter or 20 minutes
16 parts each part is equal to 40 Minutes or two thirds of the Diameter
13 parts or 8 Diameters two thirds
the Diminution is from one third of the Shaft
13 parts each part is equal to one Diameter of the Column
2 parts or Diam
2 ⅓ parts
Subplinth
a
b
c
d
e
f

To proportion the Dorick order to any given Height divide a b into 13 parts, each part is equal to one Diameter of the Column. 2 and ⅓ is the Height of the pedestal, 8 & ⅔ is the Height of the Column, & 2 is the Height of the Entablature, one Diameter to be Divided into ten parts, & one of those parts to be divided into 6 parts, each of those 6 parts is one minute, or if the Diameter be Divided into 6 parts & one in ten it will be the ſame: then each tenth part will be equal to one minute, and those minutes to be disposed to Each member as they are figur'd in Height and projection. To proportion the Dorick Order with a ſub plinth divide e, f, into 35 parts, each part is equal to 20 minutes or one third of the Diameter, and 3 of those parts is the Height of the ſub-plinth, and equal to one Diameter of the Column, which is to be divided into minutes as before, and those minutes to be disposed to each member in Height and projection as they are figur'd. To proportion the Dorick Order without the pedestal or ſubplinth, divide c d into 16 parts, each part is 40 minutes, equal to two thirds of the Diameter, but if the Column is but 8 Diameters high and set on a pedestal then divide a b into 37 parts each part is 20 minutes, if 8 Diameters, when set on a ſubplinth, divide e f into 11 parts, each part is one Diameter, without pedestal or ſubplinth if 8 Diameters divide c d into ten parts each part is one Diameter. figure a is the manner of Striking the Dorick flutes as the Ancients did make them without fillets

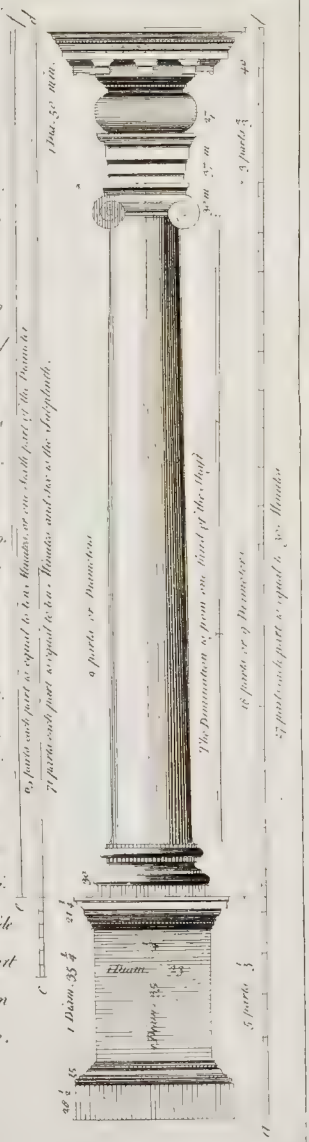
Moldings at Large for the Dorick Order ——page 37.

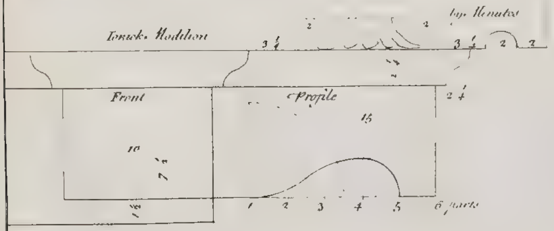

Cornices
56¾ min. Cornice
Cap of Pedestal
Base of Pedestal
Plinth of Pedestal
Base of Column
30 min
30 min
20 min
7
11
7
30
6¾
12 ¾
12 ¾
6⅓
3 ½
4 ½
12
11
10
9
8
7
6
5
4
3
2
1

The Ionick Order.


32 m
10
12
46
45 ½
27
37
52 m
or 50
10 20 30 40 50 60
60 m
1 Diameter 23 Minutes
1 Diam. 35 min. 4
15
28 ½
2 Diameters 40 Minutes

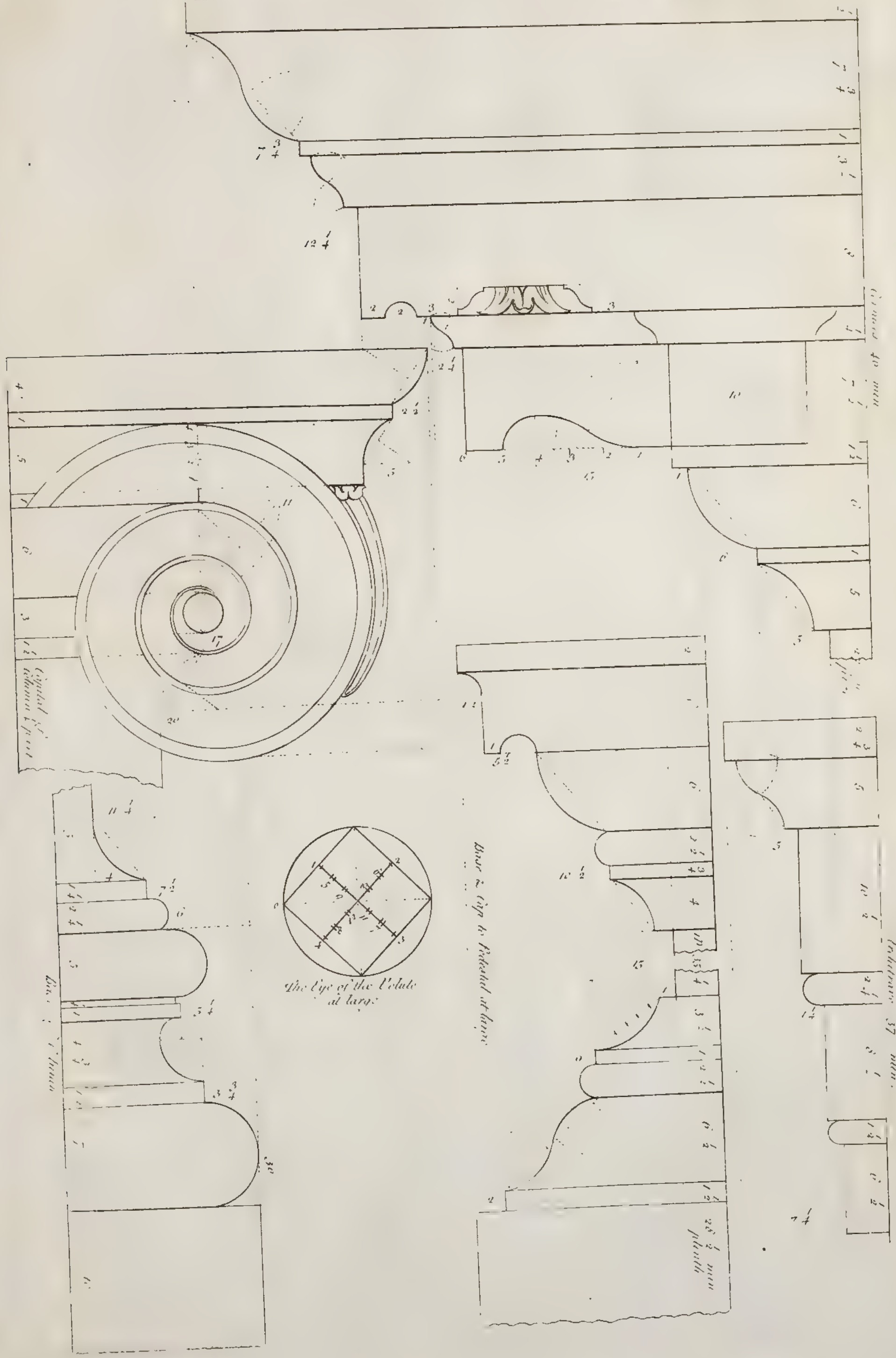
To proportion the Ionic Column with its Pedestal and Entablature to any given Height as a.b. into 27 parts, each part is equal to 30 Minutes or half the Diamtr. & those Minutes to be dispos'd to each Member as they are figur'd in height & projection to proportion the Column and Entablature. With a Subplinth divide c.d. into 71 parts, each part is 10 Min. six of them parts is ye Subpl. & equal to one diamet.r of the Column, & 11 of those parts is ye height of the Entablature. To proportion on its own Plinth divide c.f. into 65 parts each part is 10 Minutes, & 11 of them parts is the Entablature.


1 Diat. 50 min.
40
27
3 parts ¾
65 parts each part is equal to ten Minutes, or one sixth part of the Diameter
71 parts each part is equal to ten Minutes and six is the Subplinth.
9 parts or Diameters
The Diminution is from one third of the Shaft
18 parts or 9 Diameters
27 parts each part is equal to 30 Minutes
30
21 ½
1 Diam. 35 ¾
1 Diam. 33
5 parts ¾
15
28 ½
c
11

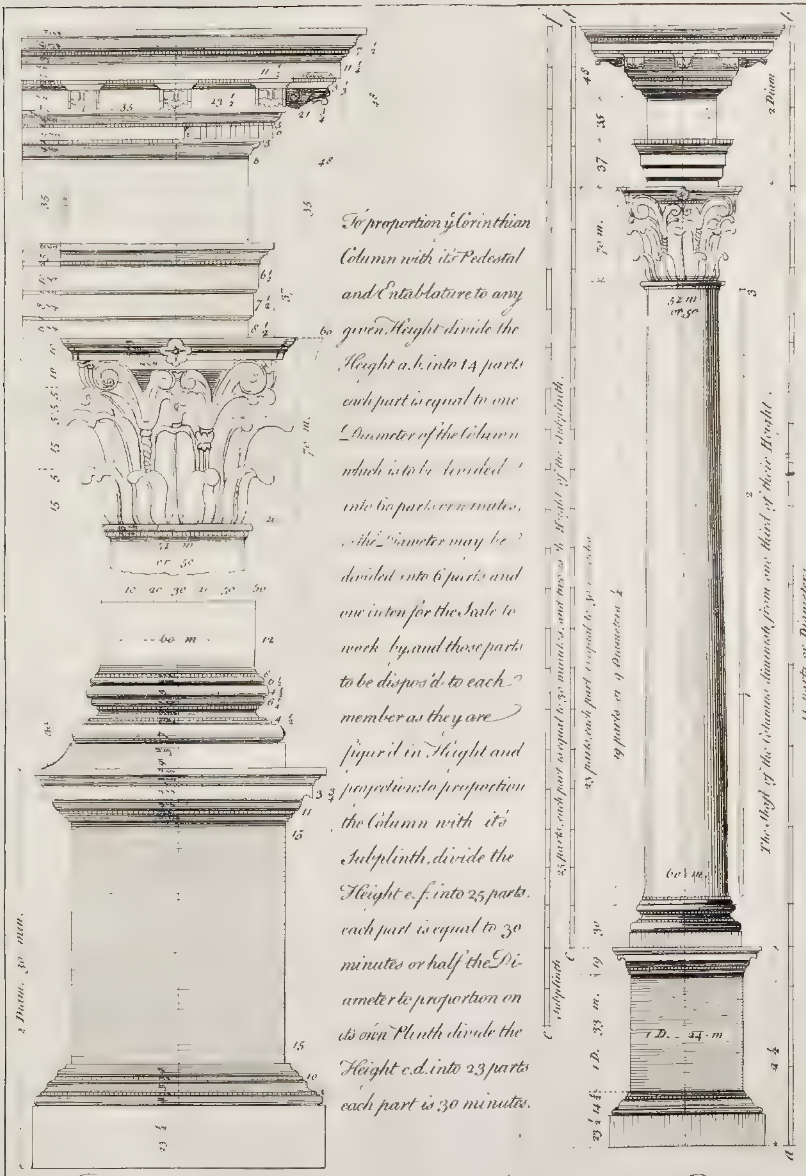

Ionick Modilion
by Minutes
3 ½
2
Front
Profile
15
10
7 ½
1 2 3 4 5 6 parts

The Diminution to be manag'd the same in all the Orders as that of the Tuscan according to what they diminish, which is plain by the figures at the Neck of each Column, and the Scales.

Moldings at large for the Ionic Order — 33


Cornice 40 min
Architrave 37 min
Base & Cap to Pedestal at large
28 ½ min plinth
The Eye of the Volute at large
Capital of Column & front
Base of Column
7 ¾
12 ¼
2 ¼
10 ½
11 ¼
3 ¼
3 ¾
30
20
17

The Corinthian Order.

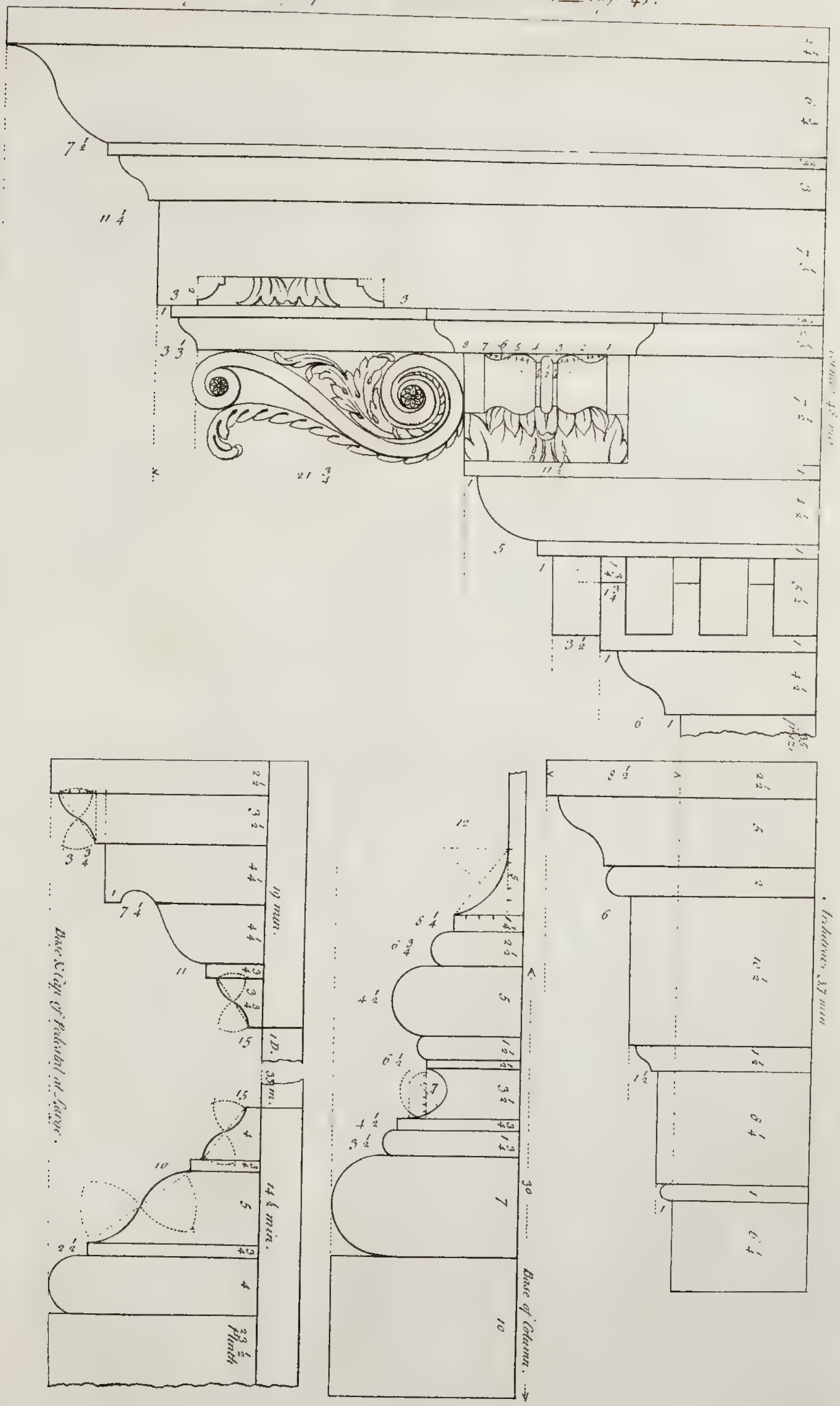

48
35
37
70 m.
52 m or 50
60 m
30
19
33 m.
1 D.
1 D. 54 m
2 Diam
3
The Shaft of the Columns diminish from one third of their Height
14 parts or Diameters
25 parts, each part is equal to 30 minutes, and are ye Height of the Subplinth.
23 parts, each part is equal to 30 minutes
19 parts or 9 Diameters ½
Subplinth
60 m
or 50
10 20 30 40 50 60
2 Diam. 30 min.
a
b
c
d
e
f

To proportion ye Corinthian Column with it's Pedestal and Entablature to any given Height divide the Height a.b. into 14 parts each part is equal to one Diameter of the Column which is to be divided into 60 parts or minutes, the Diameter may be divided into 6 parts and one in ten for the Scale to work by, and those parts to be dispos'd to each member as they are figur'd in Height and projection; to proportion the Column with it's Subplinth, divide the Height e.f. into 25 parts. each part is equal to 30 minutes or half the Diameter to proportion on its own Plinth divide the Height c.d. into 23 parts each part is 30 minutes.

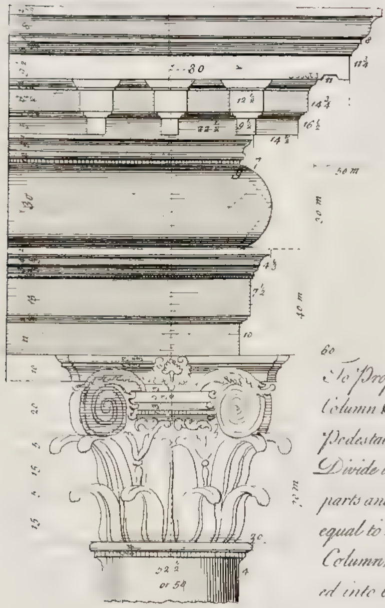
Note when Pillasters are us'd with Columns their Shafts must have the same Diminution as the Columns, but when us'd alone, they should Diminish but very little.

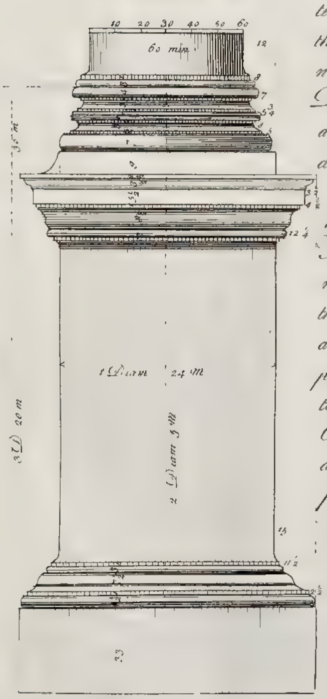
By true Inspection of the Scales and Figures the whole will be Plain and Intelligable to the meanest Capacity.

Moldings at Large for the Corinthian Order. — Page 41.

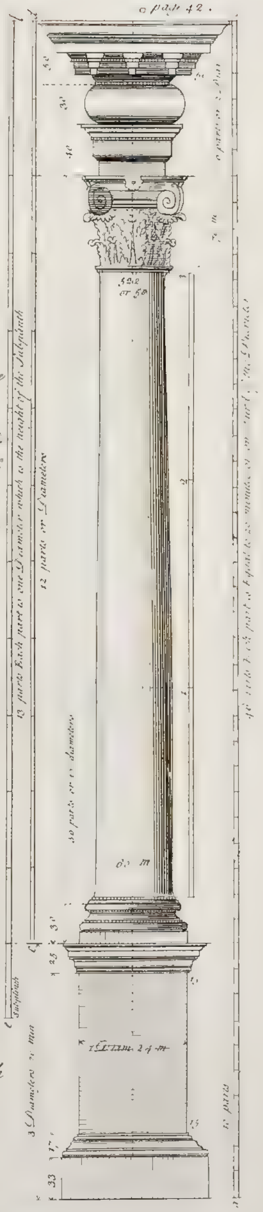

Cornice 45 min
35 frize
Architrave 37 min
Base of Column.
30
19 min.
1 D.
3½ m.
14½ min.
23½ Plinth
Base & Cap of Pedestal at Large.

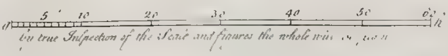
The Compoſite Order


30
11¾
14¾
16½
14½
50 m
30 m
40 m
52½
or 54


10 20 30 40 50 60
60 min
35 m
1 Diam 24 m
3 D 20 m
2 Diam 5 m
23

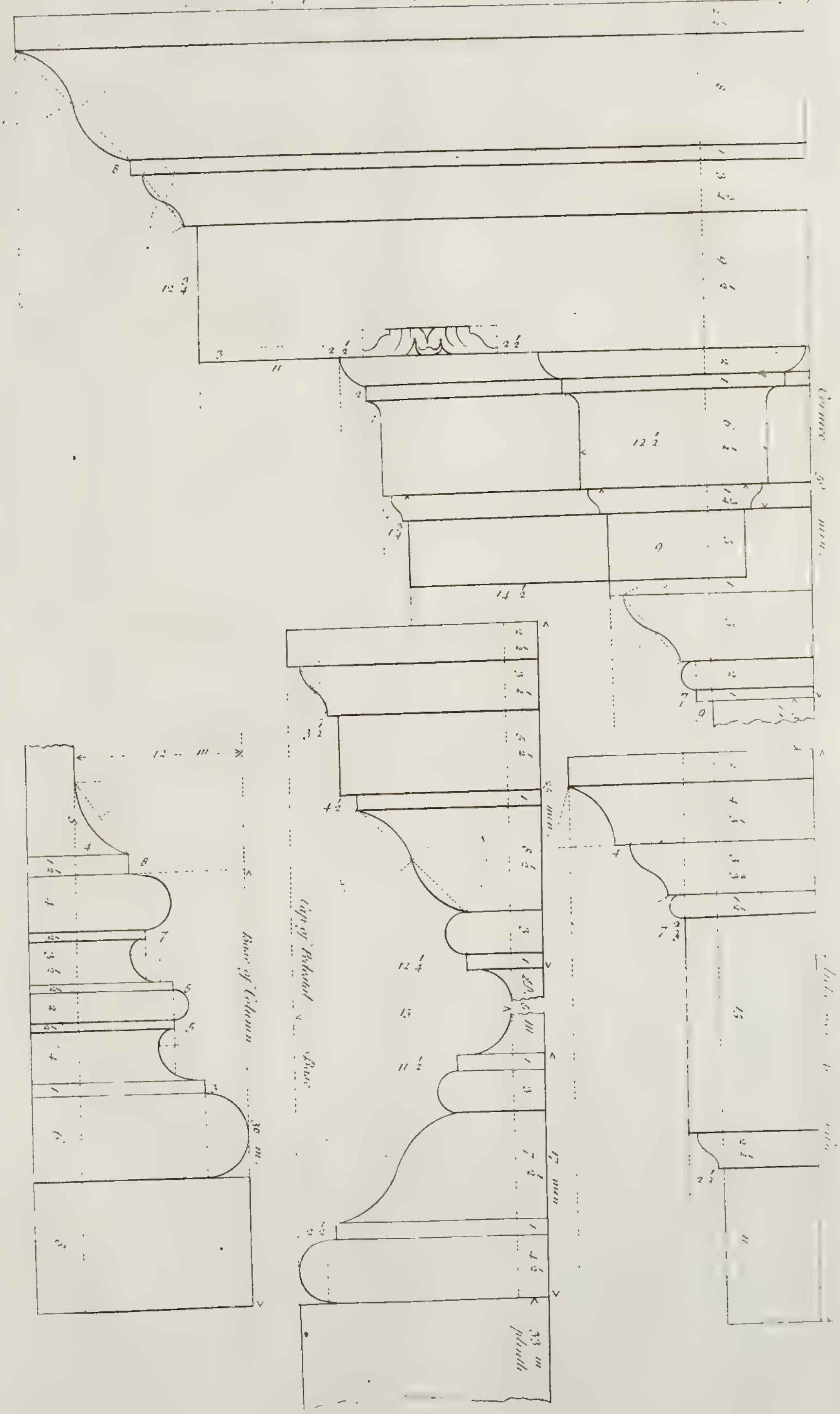
To Proportion the Compoſite Column & Entablature with its Pedestal to any given height. Divide the height a. b. into 46 parts and 3 of them parts is equal to the Diameter of the Column, which is to be divided into 6 parts and one in ten as the Scale g. h and that is a Scale of minutes, which must be equal to the Diameter of the Column; and those minutes to be disposed to each member as they are figured in height and Projection. To Proportion y^e Column with a ſubplinth; divide the height e f into 13 parts and give one to the Sub plinth; each part is equal to the Diameter of the Column; on its own plinth divide c d into 12 parts each part is a Diameter.


13 parts Each part is one Diameter which is the height of the Subplinth
12 parts or Diameters
52½
or 54
60 m
1 Diam 24 m
33
12 parts

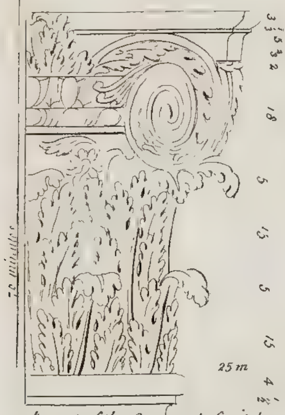

g
5
10
20
30
40
50
60
h

By true Inſpection of the Scale and figures the whole will [illegible]

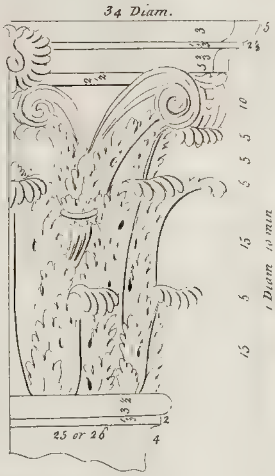
Moldings at large for the Composite Order. — Plate 43.

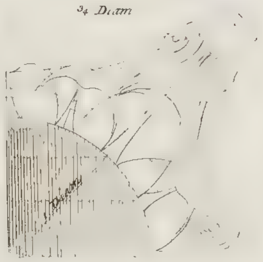

Cornice 50 min.
Cap of Pedestal & Base
Base of Column
30 m.
25 min.
17 min.
33 m plinth
12 m
12 ¾
12 ½
14 ½
15
11 ½
9
6
4
8
7
3
2 ½
4 ½

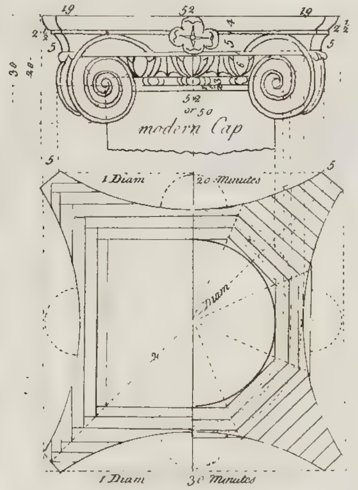
The Tuscan Dorick Ionick Corinthian & Composite Capitals.


32 minutes
3½
3
3
2
18
5
15
5
15
4½
25 m

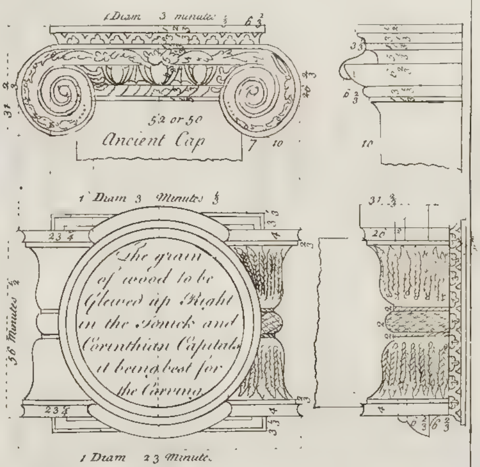
¼ part of the Composite Capital.


34 Diam.
3
3
3
5
2½
2½
10
5
5
5
15
5
15
3½
2
25 or 26
4
1 Diam 10 min


34 Diam
1 Diam

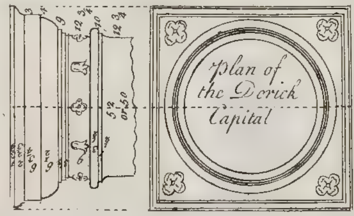

19
52
19
2½
2½
30
20
5
5
5½
or 50
modern Cap
5
5
1 Diam
20 Minutes
Diam
1 Diam
30 Minutes

The modern Ionick Capital with its plan for a Column or pillaster.


1 Diam 3 minutes ⅓
52 or 50
Ancient Cap
7
10
10
1 Diam 3 Minutes ⅓
36 Minutes ½
1 Diam 23 Minutes

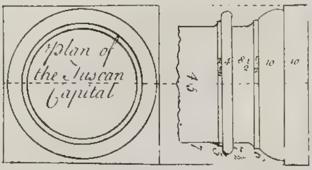
The grain of wood to be Glewed up Right in the Ionick and Corinthian Capitals it being best for the Carving

The Ancient Ionick Capital for a Column with its plan and profile, and all its parts figured by a Scale of minutes, made on the diameter of the Column at Bottom, and all the Capitals are laid down by a scale of minutes one the diameter.



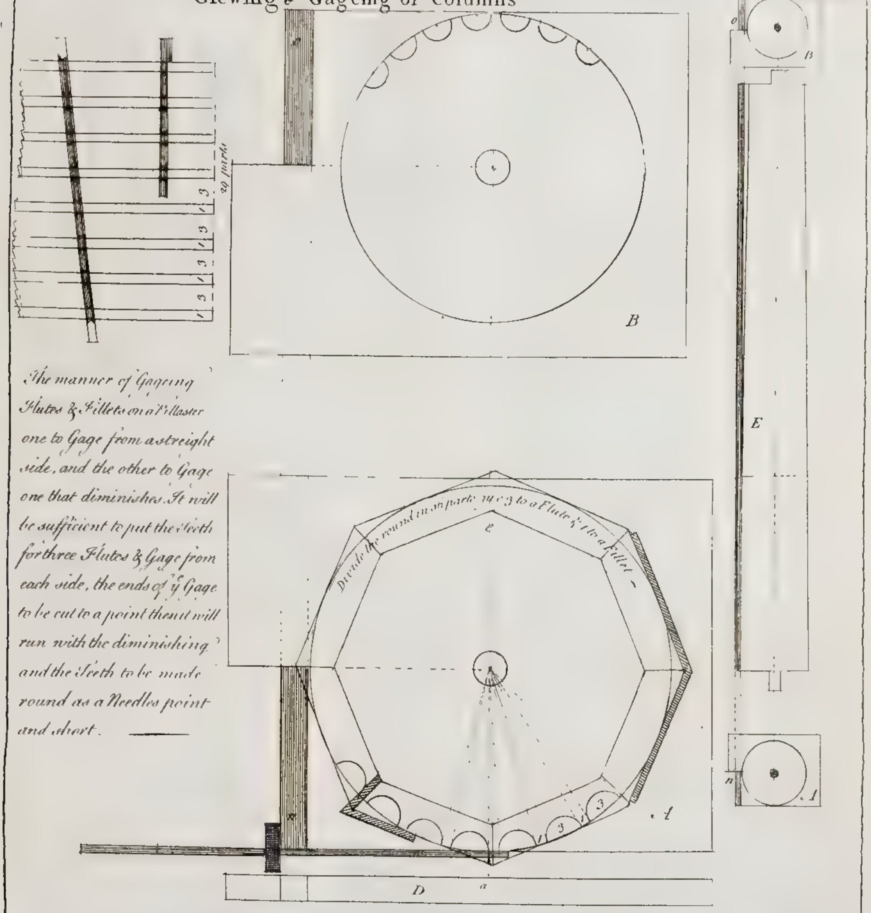
Plan of the Dorick Capital

The whole will be plain and Easey with a little practice &c.



Plan of the Tuscan Capital

Glewing & Gageing of Columns

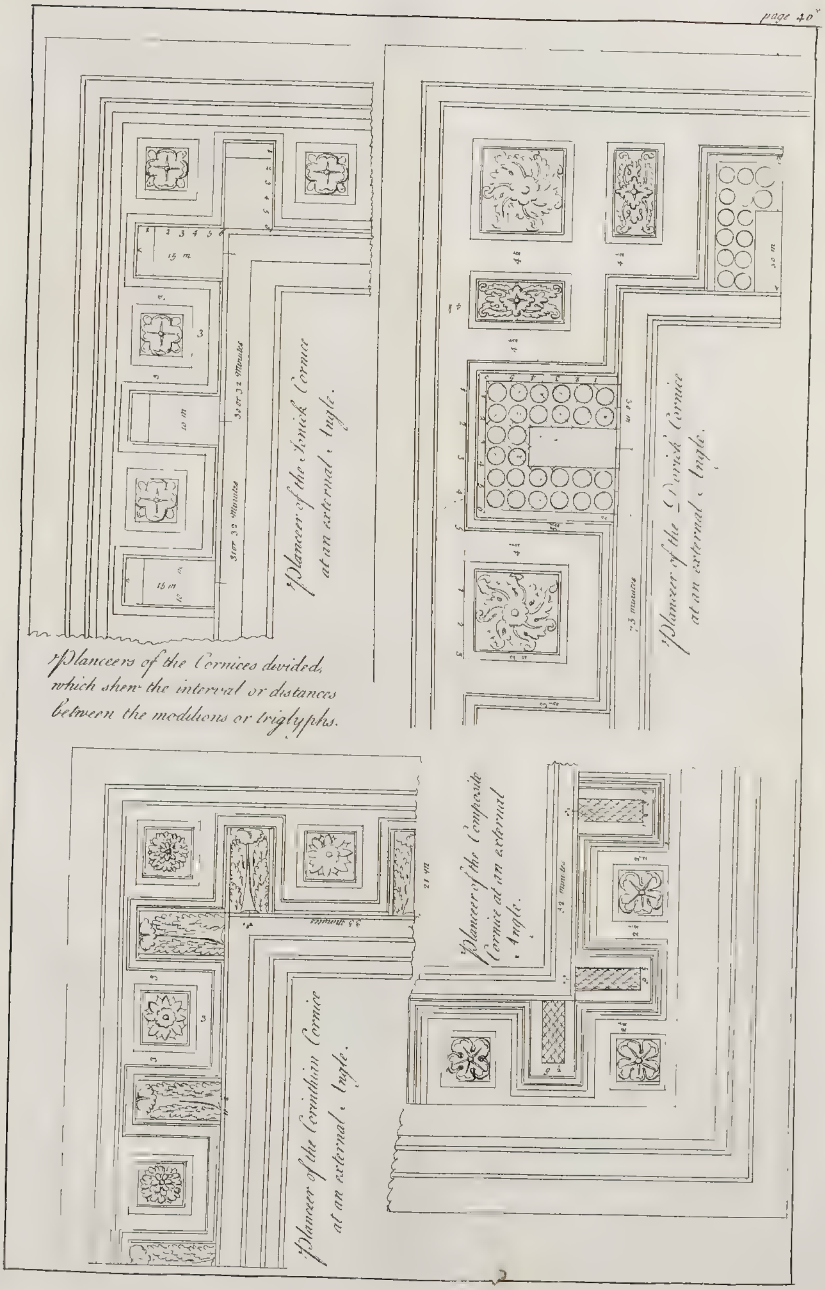

20 parts
3
3
3
3
3
B
E
Divide the round in 96 parts 24 e 3 to a Flute & 1 to a Fillet
e
o
B
n
A
1
3
D
a

The manner of Gageing Flutes & Fillets on a Pillaster one to Gage from a streight side, and the other to Gage one that diminishes. It will be sufficient to put the Teeth for three Flutes & Gage from each side, the ends of yͤ Gage to be cut to a point then it will run with the diminishing and the Teeth to be made round as a Needles point and short.

The manner of Gageing Columns for the Flutes & Fillets. Figure E is a Column, to be put in the Reel to be gaged & the black part is a streight Rule that lies parallel from the Center of the Column & diminishes on the top edge the same as the Column and the Edge to stand as high as the top of the Column in the Reel as shewn by the ends of the Rule mark'd n, o, and A B is two pieces of board or plank to make the Reel to hang the Column in, and the Centers to be made for the top of the Column, to be level with the top of the plank, then a square stroke up the side of the plank from the Center, then square over that stroke as at a. on the edge of yͤ plank Figure D then in turning round the Column the edge of every Flute must stop at the stroke a then will the Gage run true to the Center of the Column as shewn by the dotted line e.

Note every part must be true and out of winding, & the Work will completely answer.

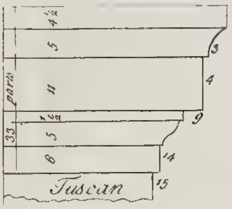
Glew the Column in 8 or 12 parts then the Joint will be in the fillets and not in the flutes.

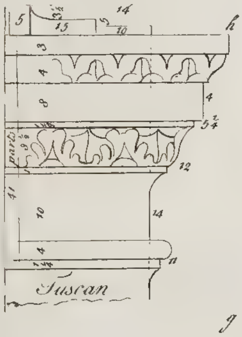


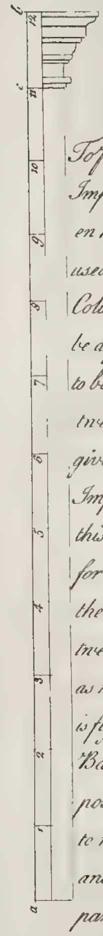
Planceers of the Cornices divided,
which shew the interval or distances
between the modilions or triglyphs.

Planceer of the Ionick Cornice at an external Angle.
Planceer of the Dorick Cornice at an external Angle.
Planceer of the Corinthian Cornice at an external Angle.
Planceer of the Composite Cornice at an external Angle.
31 or 32 Minutes
15 m
10 m
1 2 3 4 5 6
73 minutes
30 m
21 m
35 minutes
32 minutes

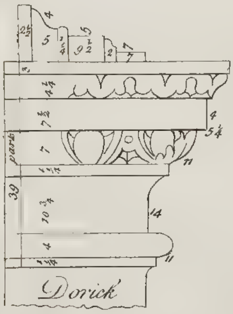
Impoſt at Large.

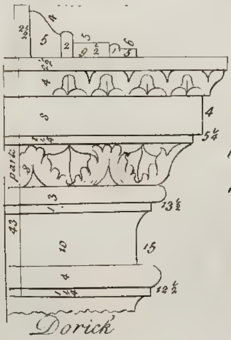

parts
33
4½
5
11
1½
5
6
3
4
9
14
15
Tuscan

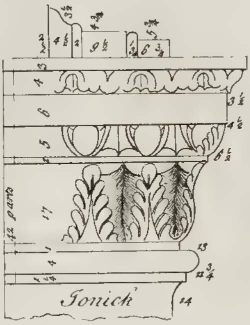

h
parts
41
5
15
14
10
3
4
8
10
4
4
5¼
12
14
11
Tuscan
g

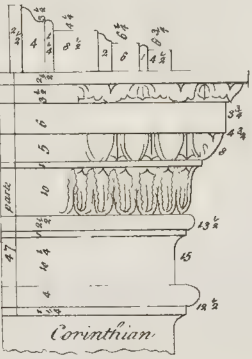

b
c
e
a
12
11
10
9
8
7
6
5
4
3
2
1

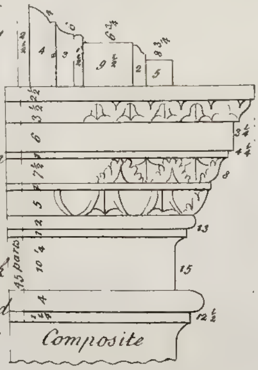
To Proportion the Impost to any given height, when used without the Columns. Let a.b. be a given height to be divided into twelve parts, and give one to the Impost as, e, b, & this will be a Rule for any height, then divide the twelfth part into as many parts as is figur'd at the Back of the Impost, you intend to make use off, and dispose them parts to each member as they are figured in height and projection. The projections are ſet back from a plum Line dropped from the extream part of the Impost, as g.h.


parts
39
7
10¾
4
4
5¼
11
14
11
Dorick

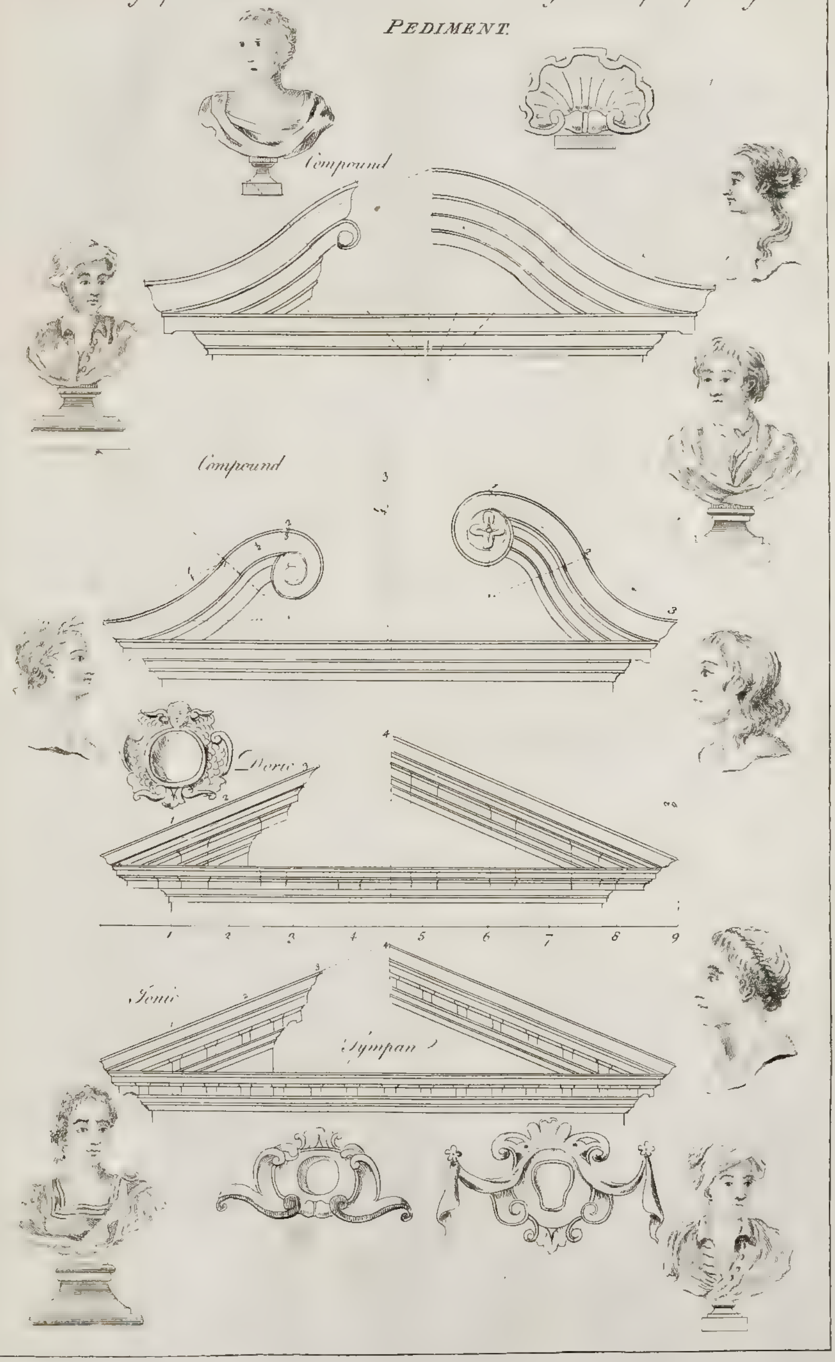

parts
43
4
8
3
10
4
4
5¼
13½
15
12½
Dorick


parts
42
6
5
17
4
3½
4½
6½
13
12¾
14
Ionick

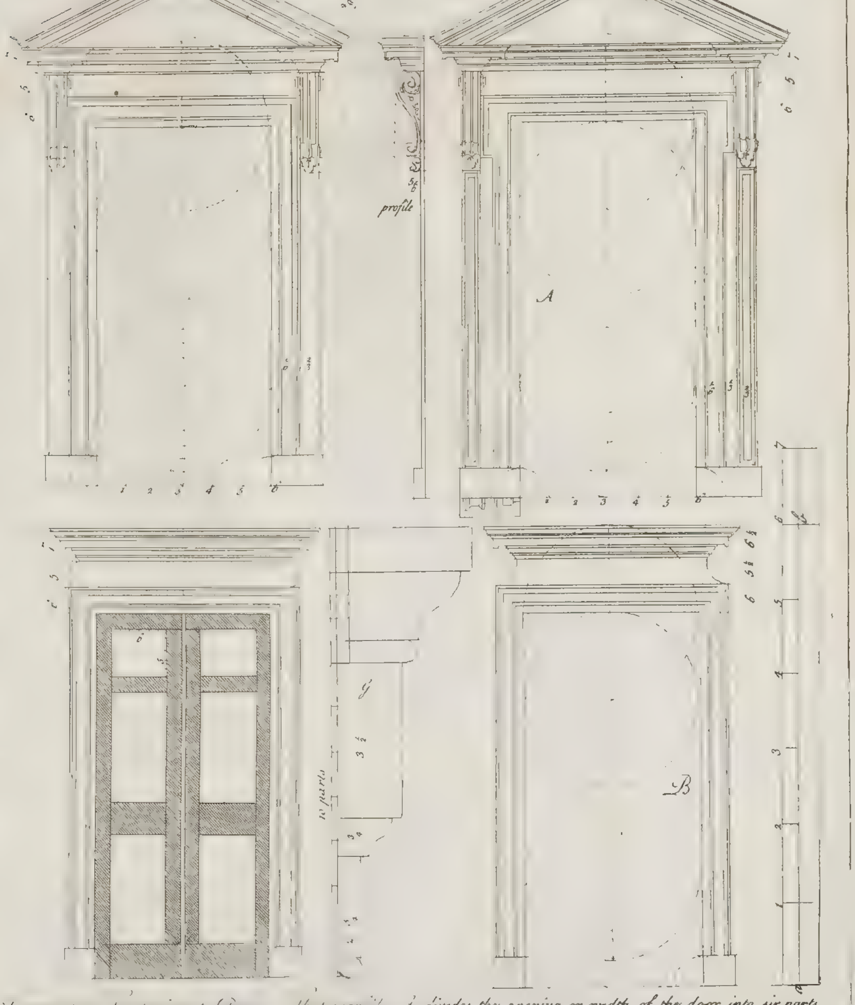

parts
47
6
5
10
4
3¾
4¾
8
13½
15
12½
Corinthian


parts
45
6
7½
5
10
4
3¾
4¾
8
13
15
12½
Composite

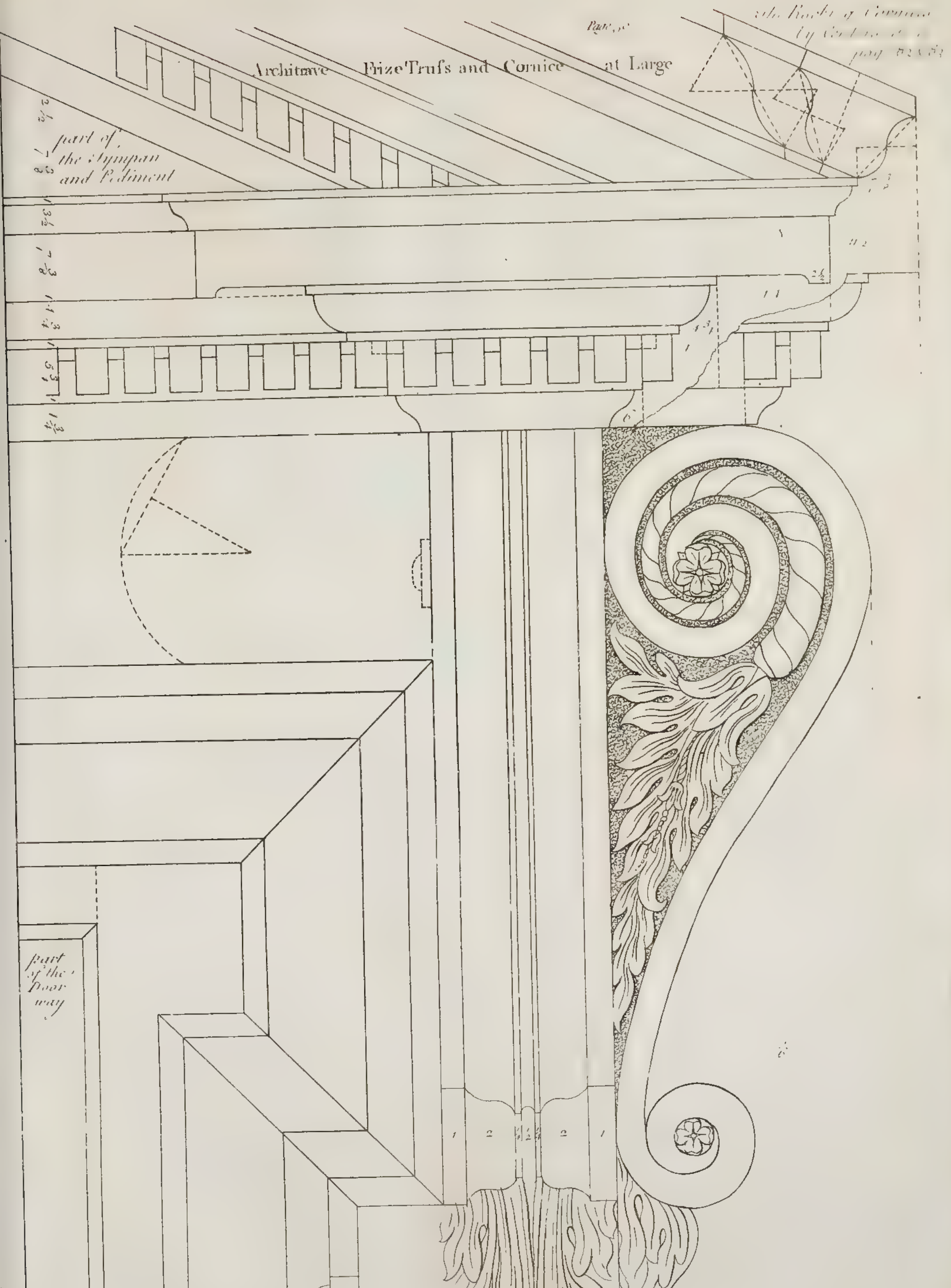
The manner of open Pediments with Busto's & Shells for the open part of the PEDIMENT.


Compound
Compound
Doric
1
2
3
4
5
6
7
8
9
Ionic
Tympan

The proportion of Doors

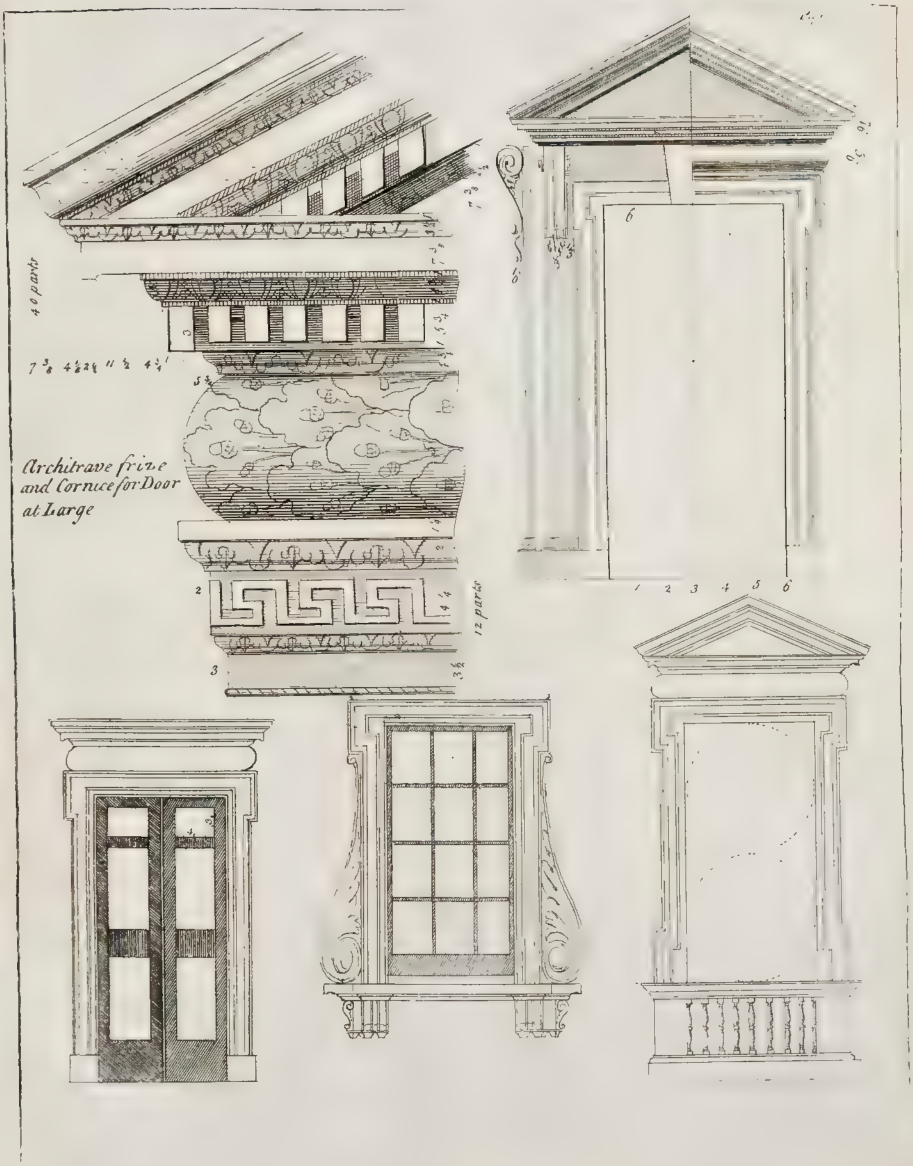


To proportion Frontispieces to Doors. That mark'd A divides the opening or width of the door into six parts, give one to the Architrave, then divide the Architrave into three parts, give one to the knee of the Architrave and two to the open pilaster, then for the height of the Architrave, frize and Cornice which is half the width of the opening of the door, this is plain by Circles, the frize and Cornices take their parts from the Architrave. Suppose the Scale a b to be the width of the Architrave G which must allways be divided into Six parts, then give five of them parts to the frize and Seven to the Cornices as they are figured, or five and a half to the frize and Six and a half to the Cornices as that of B. The height of the opening is two diameters one Sixth or two diameters one twelfth and the Rest will be plain to inspection &c The length of the knee, twice the Architrave width. the projection of the truss ⅚ of the Architraves breadth or equal to the breadth of the Architrave.



Architrave Frize Truſs and Cornice at Large

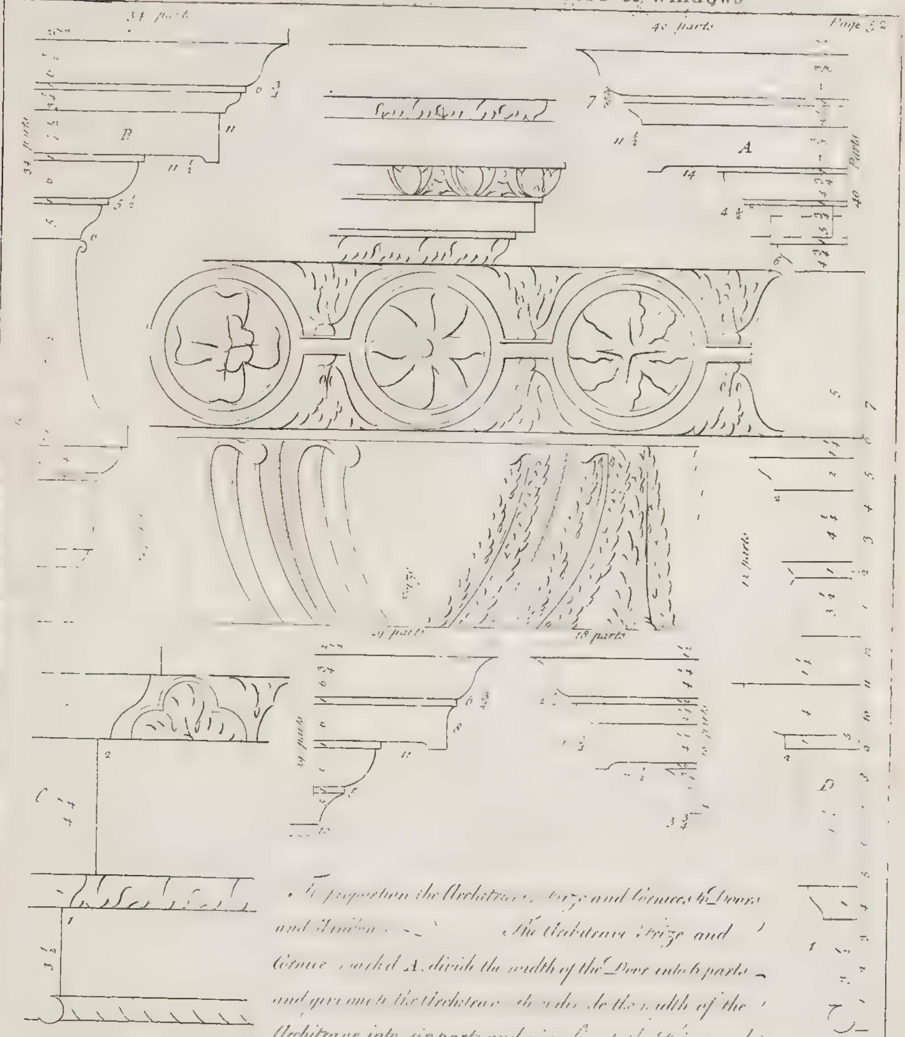
part of the Tympan and Pediment
part of the Door way
2½
1¾
1¾
1¾
1¼
5¾
1¾
1½
2½
1¾
1
6
1
2
½
2
½
2
1
3½
1¼
2
1¼
½
of 6
⅔ of ⅙



Architrave frize and Cornice for Door at Large

40 parts
12 parts
6
1 2 3 4 5 6

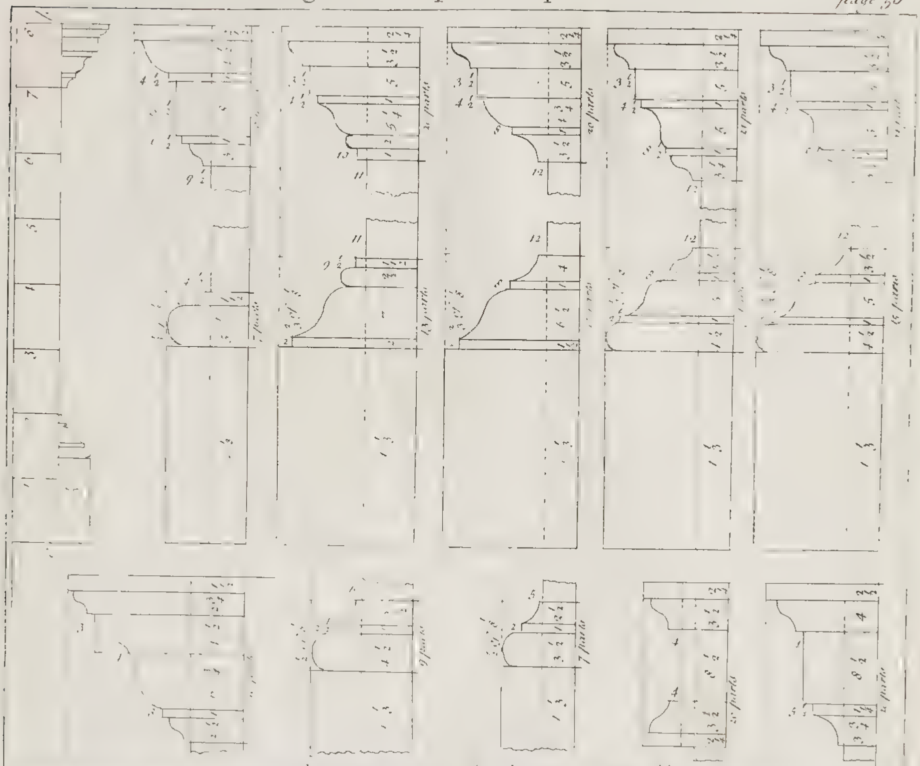
Architraves, Frize & Cornices for Doors or Windows



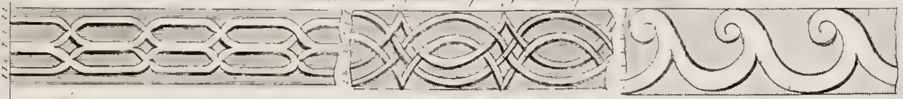
To proportion the Architrave, Frize and Cornices to Doors and Windows. — The Architrave Frize and Cornice marked A. divide the width of the Door into 6 parts and give one to the Architrave, then divide the width of the Architrave into six parts and give five to the Frize and seven to the Cornice as is figur'd at the back of the Architrave then divide the Cornice into forty parts, and dispose those parts to each Member as they are figured in height and projection; the projection of the Dentil is two thirds of its height and the interval or distances is one third; then divide the Architrave into twelve parts, and dispose them parts to the faces and Moldings of the Architrave as they are figur'd. — The Architrave, Frize and Cornice mark'd B. is the same as that of A. only give [illegible] and [illegible] Frize, and six and half to the Cornices. the Architrave is divided into twelve parts, and the Cornices into thirty four parts, and them parts dispose to each member as before. C. and D. are two Architraves at large, &c.

Note the width of the Architrave to be one sixth part of the Doors or Windows. —

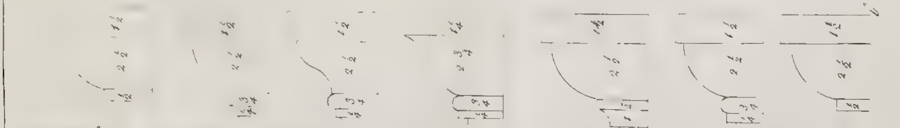
Moldings for the pedeital part of Rooms.



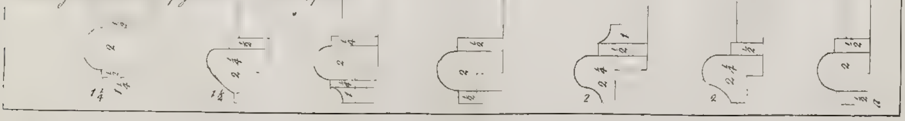
Scroll and Guiloche for Ground of [illegible]



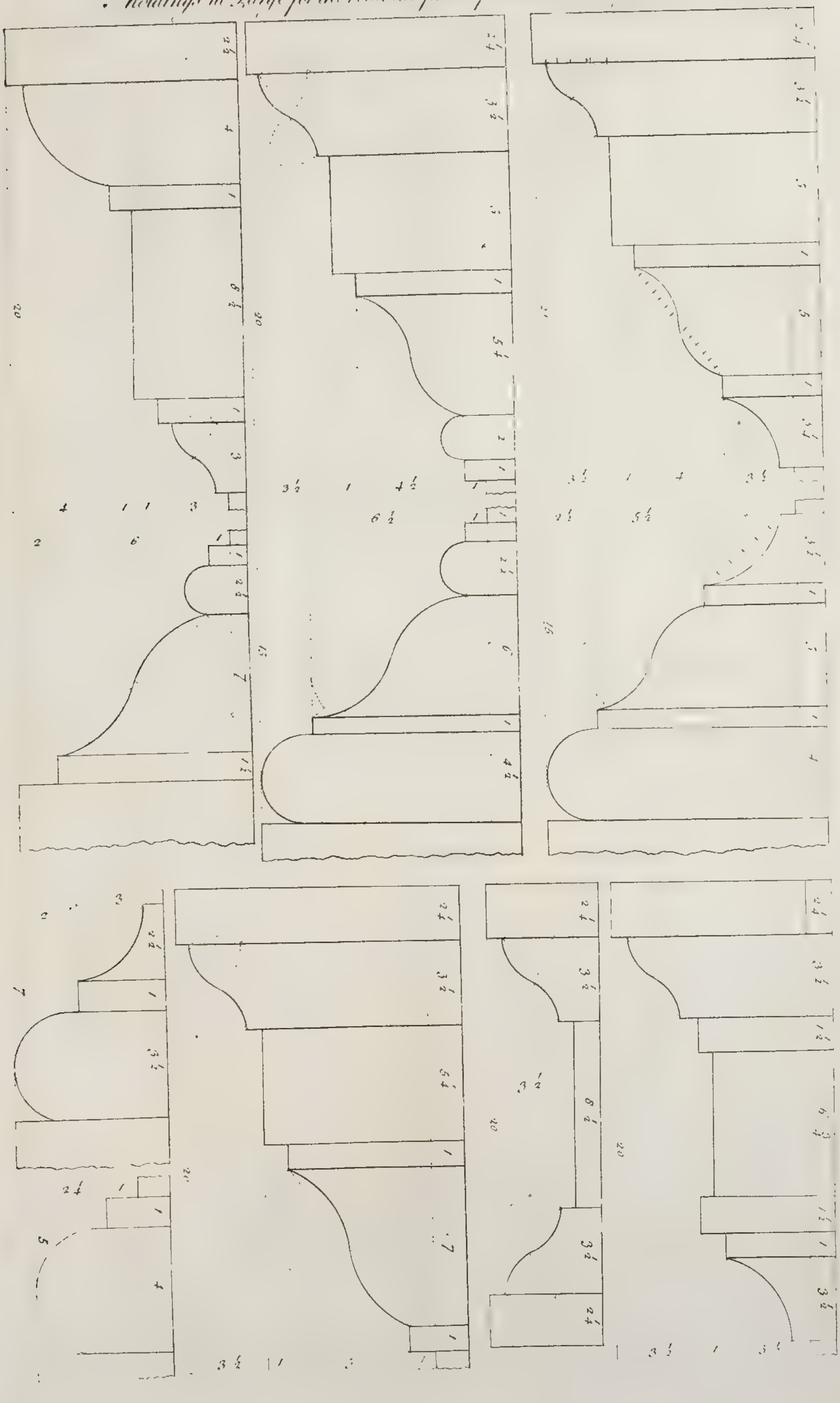
To proportion the Base and Cornices to the Pedestal part of Rooms, suppose a. b. to be a given Height of the Pedestal part of the Room, and that Height always to be divided into eight parts and give one, and one third to the height of the Plinth, and two thirds to the Base Molding, and one eighth part to the Cap or Cornices of the Pedestal; and the height of the Base and Cornices, to be divided into as many parts as is figur'd at the back of each Molding; and them parts to be dispos'd to each member in height and projection as they are figur'd; the height from two foot eight Inches to three foot.



Moldings for picture frames at Large the width of the Moldings a[nd] one tenth or one twelfth part of the width of the frame from out to out & each molding divided as figured in 14 parts.

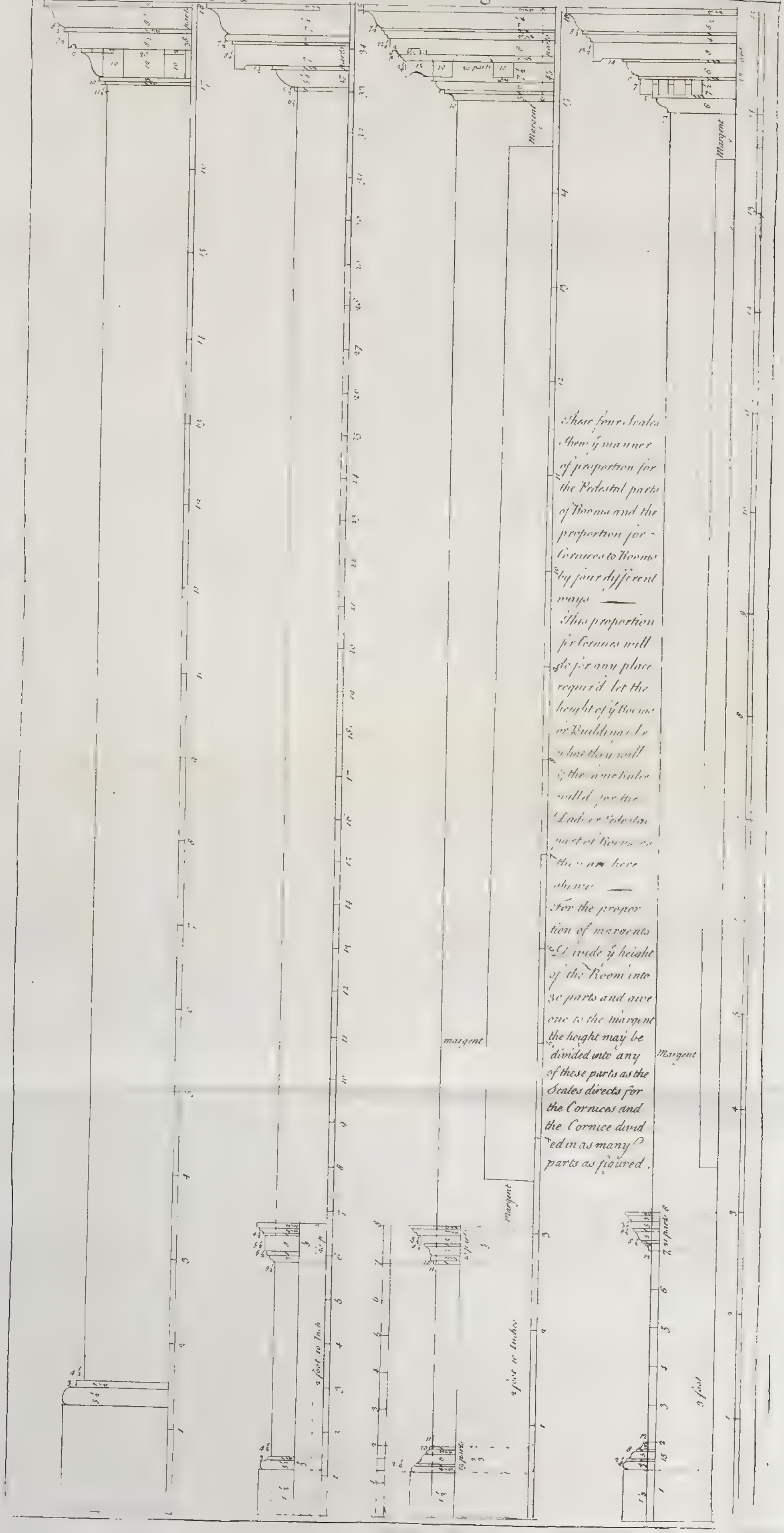


Moldings at Large for the Pedestal part of Rooms. —Page 54.



2½
4
1
8¼
1
3
4
1 1
3
2
6
1
2¼
7
1½
20
2¼
3¼
5
1
5¼
2
3½
1
4½
6½
1
2¼
6
1
4½
20
15
2¼
3¼
5
1
5
1
3¼
3½
1
4
3½
2½
5½
3¼
1
5
1
4
2¼
1
3½
3
2
7
2¼
1
5
4
3½
1
3
2¼
3¼
5¼
1
7
1
2¼
3¼
3½
8¼
3¼
2¼
20
20
2¼
3½
1½
6¾
1½
1
3½
3½
1
3½

The proportion of Cornices & margents to Rooms.

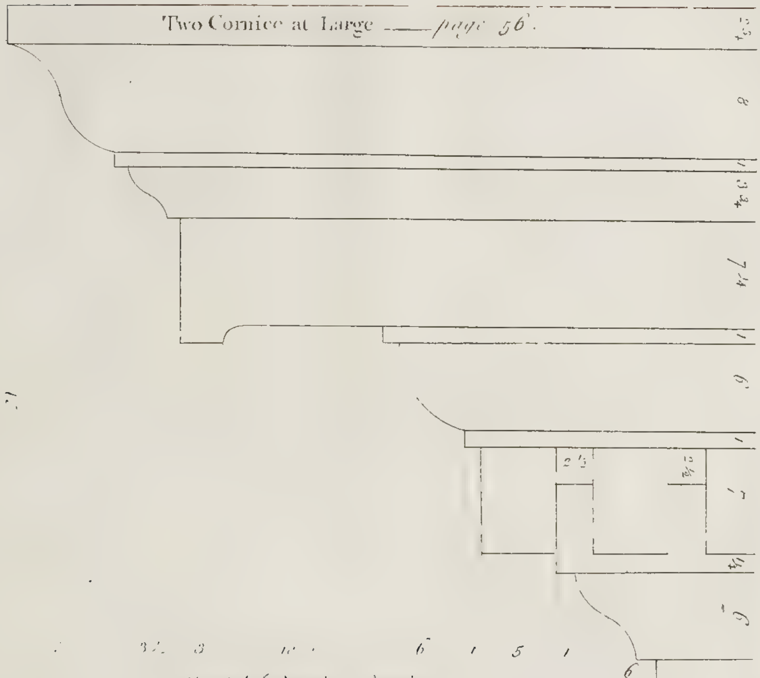

Margent
margent
Margent
Margent
parts
10 parts
7 11 parts 6
9 foot
4 foot 10 Inches
2 foot 10 Inch

These four Scales Shew yᵉ manner of proportion for the Pedestal parts of Rooms and the proportion for Cornices to Rooms by four different ways ——

This proportion for Cornices will do for any place requir'd let the height of yᵉ Rooms or Buildings be what they will & the same rules will do for the Dado or Pedestal part of Rooms as they are here shewn ——

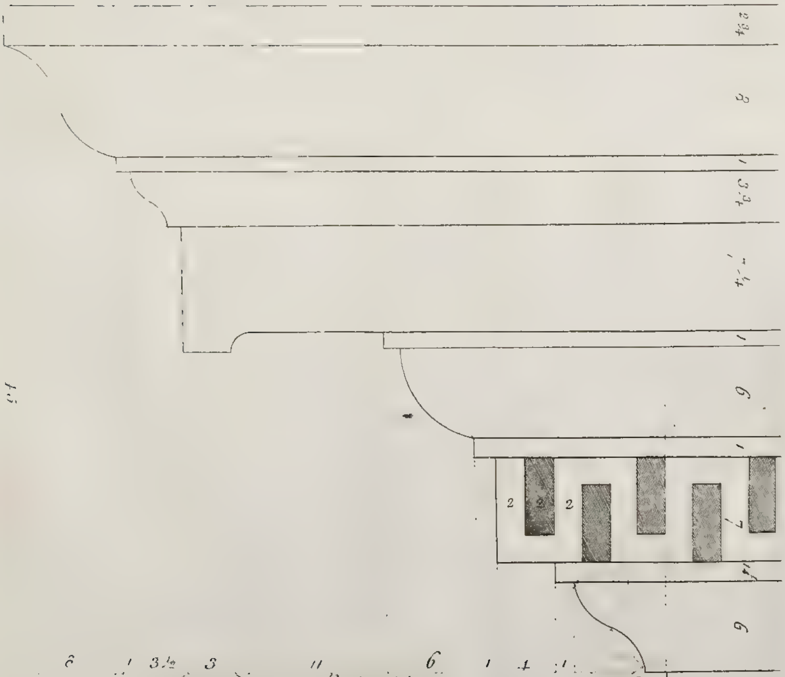
For the proportion of margents Divide yᵉ height of the Room into 30 parts and give one to the margent the height may be divided into any of these parts as the Scales directs for the Cornices and the Cornice divided in as many parts as figured.

Two Cornice at Large —— page 56.



2¾
8
1
3¾
7¼
1
6
1
2½
2½
7
1¼
6
3½
3
10
6
1
5
1
6

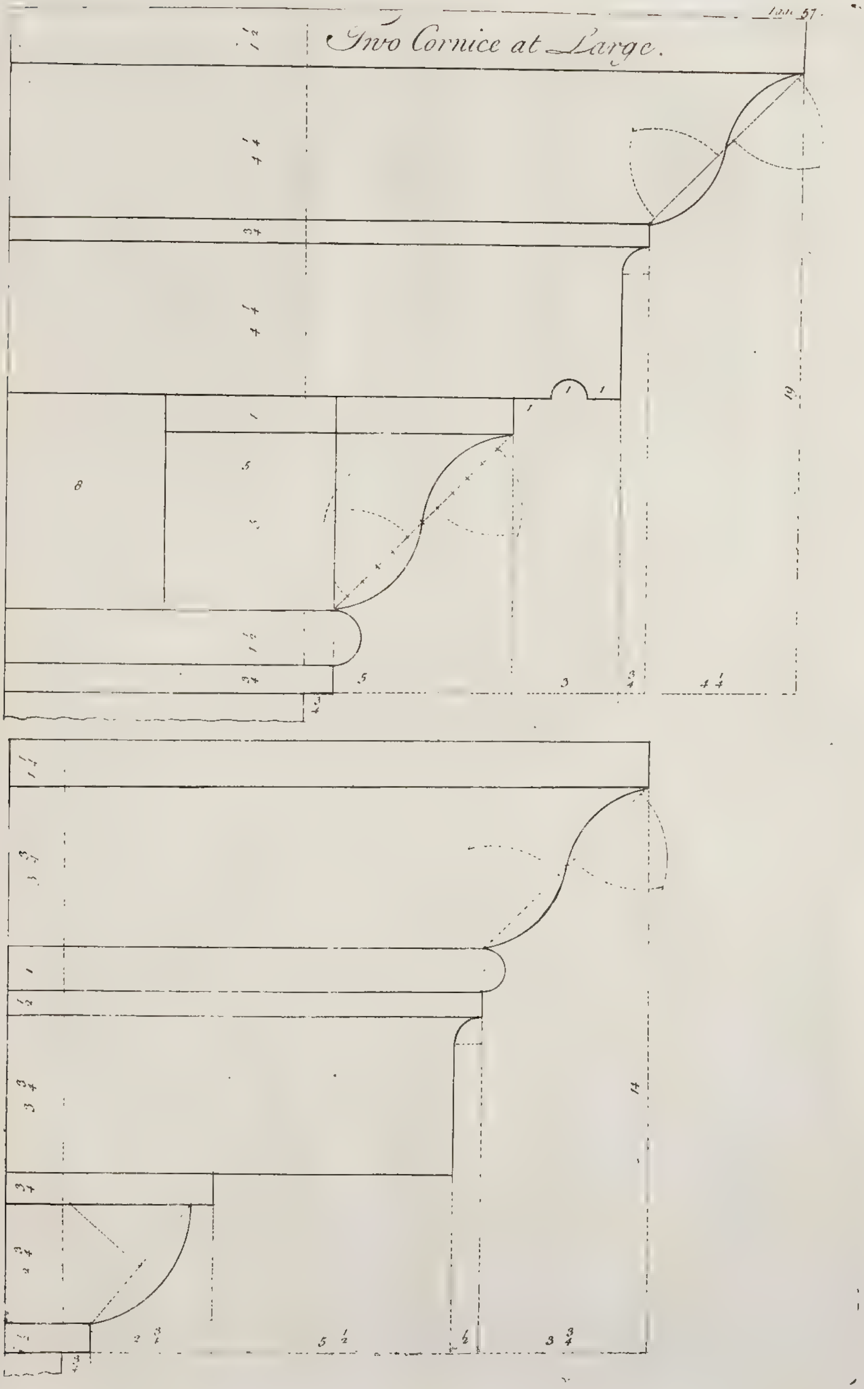
Ionick Dentile Cornices

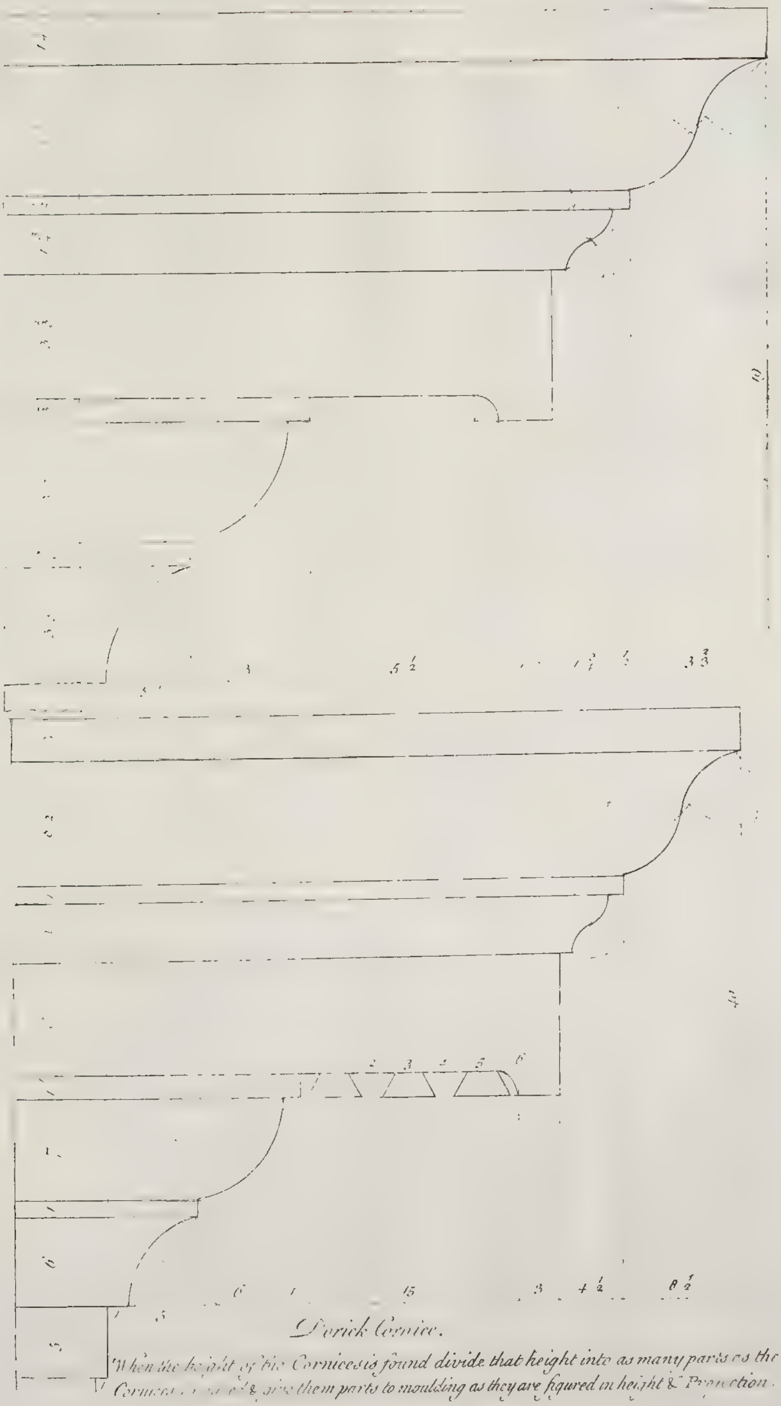


2¾
8
1
3¾
7¼
1
6
1
2
2
2
7
1¼
6
6
1
3½
3
11
6
1
4
1
6

Fret Dentel Bedmold.

Two Cornice at Large.

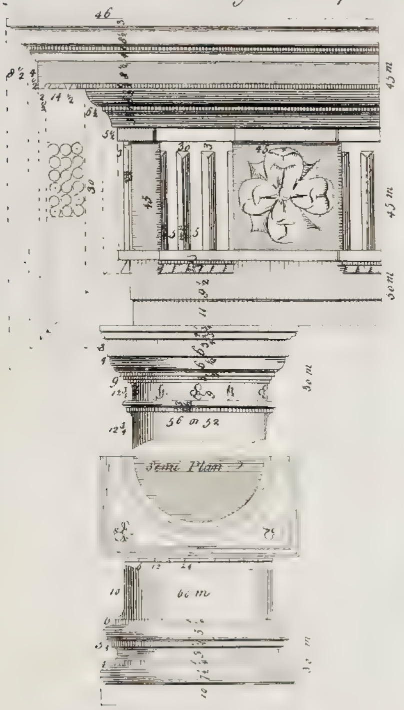

1 1/2
4 1/4
3/4
4 1/4
1
1
1
8
5
5
1 1/2
3/4
5
3
3/4
4 1/4
19
3/4
1 1/4
3 3/4
1
1/2
3 3/4
3/4
4 3/4
1
2 3/4
5 1/2
1/2
3 3/4
14
3/4


10
3
5½
3⅔
4
2
3
2
5
6
6
1
15
3
4½
8½
5

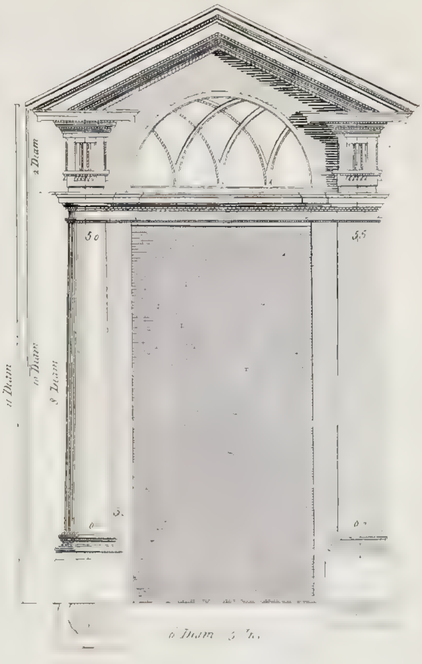
Dorick Cornice.

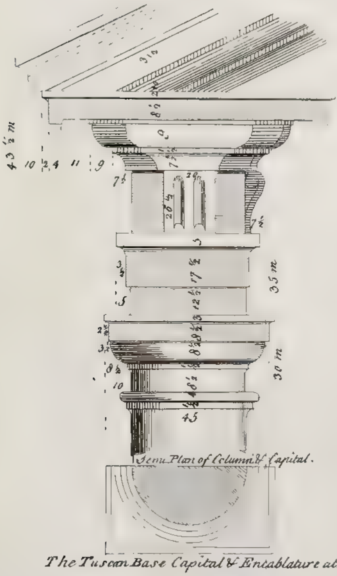
When the height of the Cornice is found divide that height into as many parts as the Cornice is mark'd & give them parts to moulding as they are figured in height & Projection.

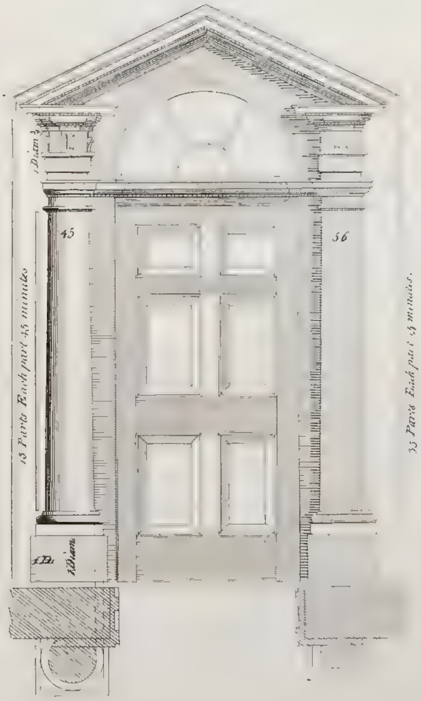
Dorick Entablature with ye Base & Capital


46
45 m
45 m
30 m
30 m
56 or 52
Semi Plan
60 m

Dorick Frontispieces.

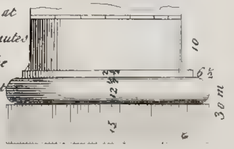

2 Diam
11 Diam
10 Diam
9 Diam
50
55
6 Diam

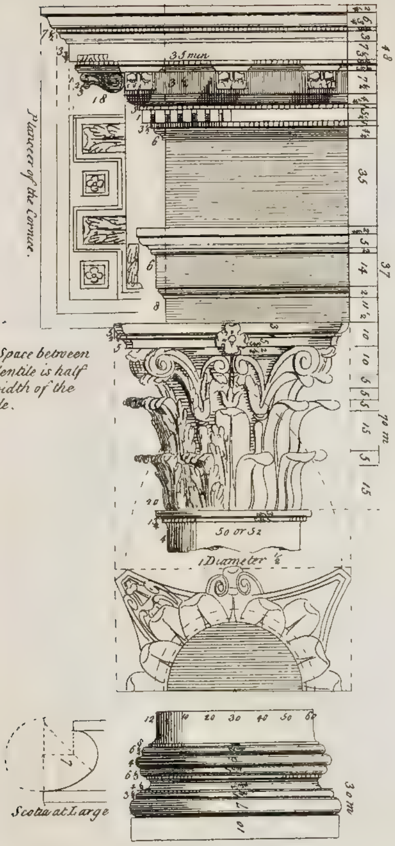

43½ m
35 m
30 m
45
Semi Plan of Column & Capital.


1 Diam
45
56
13 Parts Each part 45 minutes
33 Parts Each part 45 minutes
1 Diam

The Tuscan Base Capital & Entablature at Large

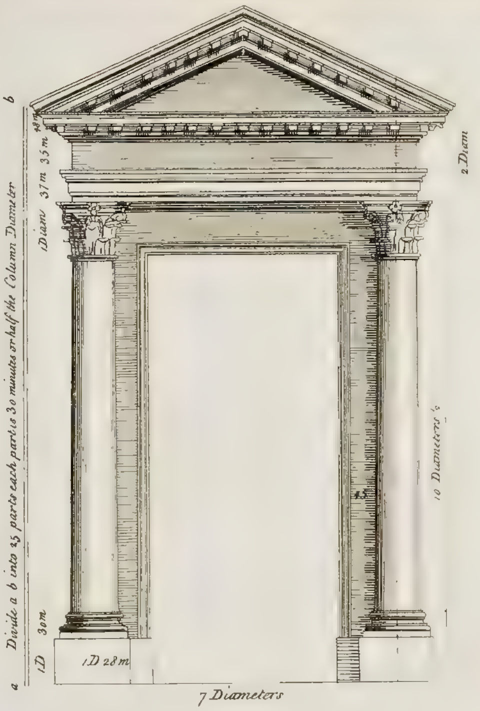
Divide the Column at Bottom into 60 minutes and give them to the Mouldings in height and projection as they are figur'd.

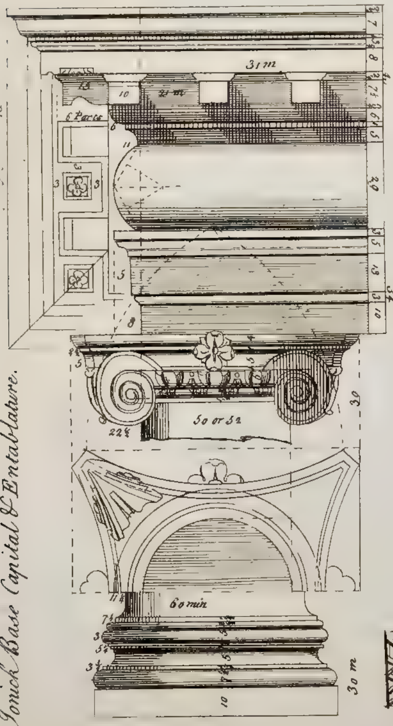

10
6½
12
30 m
15
6


Planceer of the Cornice.
35 min
18
35
37
70 m
1 Diameter ½
50 or 52
Scotia at Large
30 m

The Space between the dentile is half the width of the dentile.

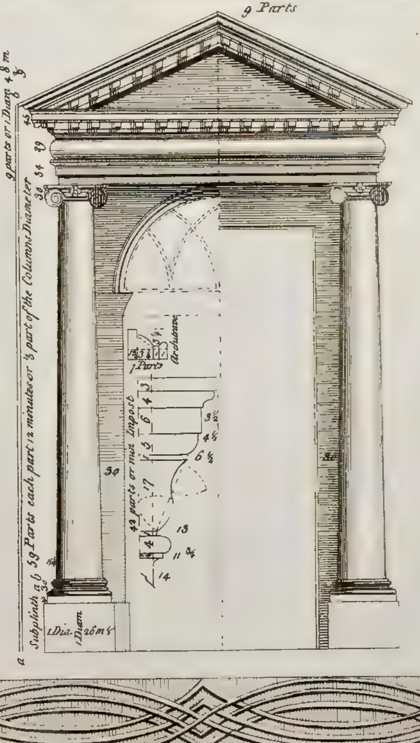
a Corinthian Frontispiece with the mouldings at Large.

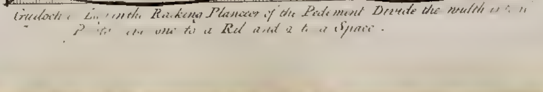

b
a
Divide a b into 35 parts each part is 30 minutes or half the Column Diameter
35 m
37 m
1 Diam
2 Diam
10 Diameters ½
30 m
1 D
1 D 28 m
7 Diameters


Planceer of Cornice
31 m
21 m
6 Parts
50 or 52
39
60 min
30 m

Jonick Base Capital & Entablature.

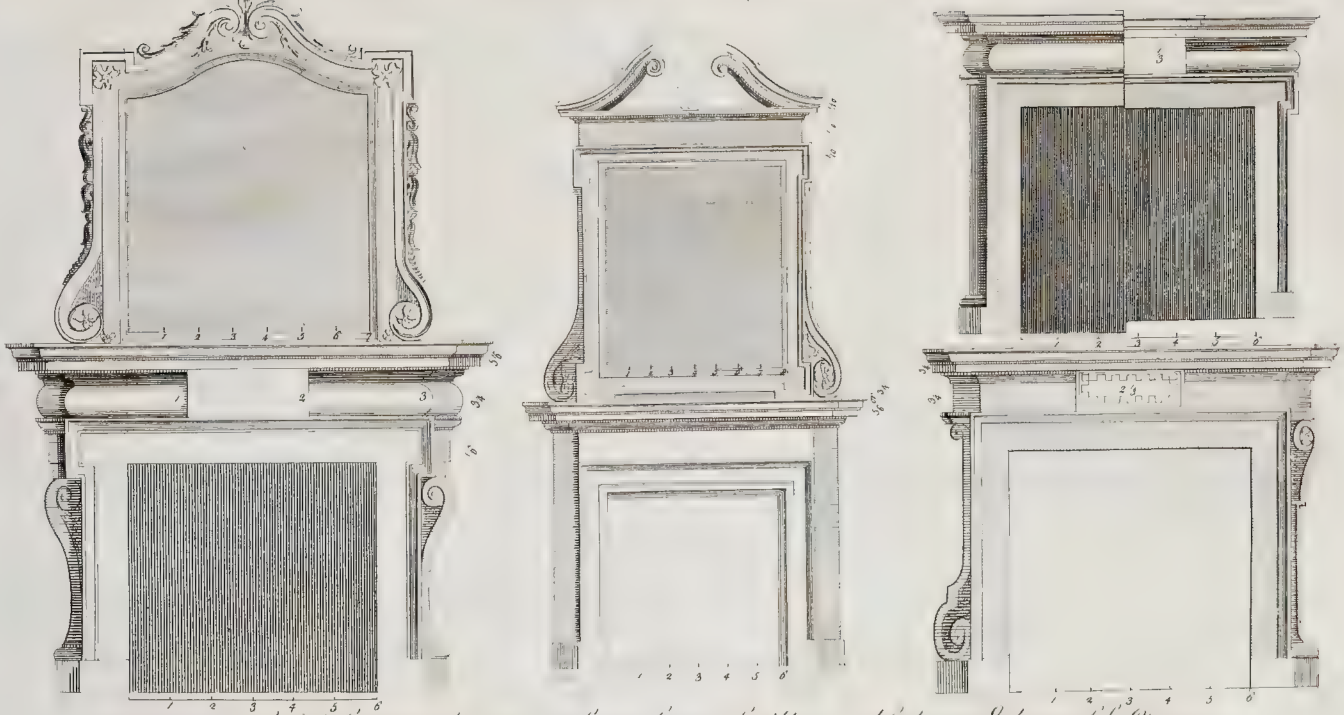
Jonick Frontispiece with the mouldings at Large


9 Parts
9 parts or 1 Diam 4 8 m
Subplinth a b 59 Parts each part 12 minutes or ⅕ part of the Columns Diameter
a
42 parts or mit Impost
Architrave
1 Parts
30
1 Dia
1 Diam 26m ½



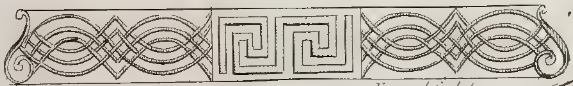
Guilloche [illegible] in the Racking Planceer of the Pediment Divide the width into [illegible] Parts as one to a Ril and 2 to a Space.

Six Designs for Chimney Pieces.

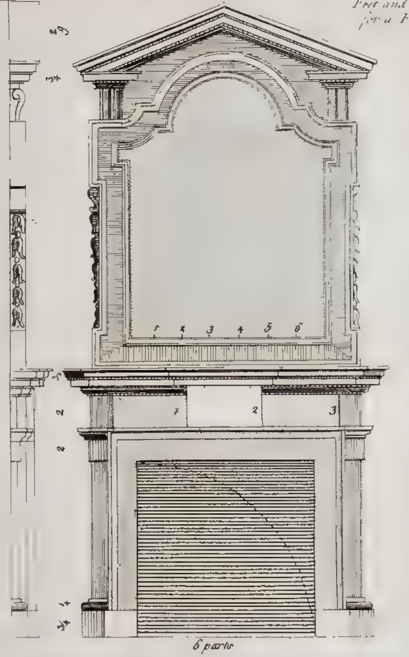

1
2
3
4
5
6
7
56
34
16
2
3
1/10
1/6
1/10
1/3
2/3

N.B. The Breadth of ye Architraves to Chimneys not to be more than one Sixth Part nor leſs than one Eight part of the Opening.

Three Chimney Pieces

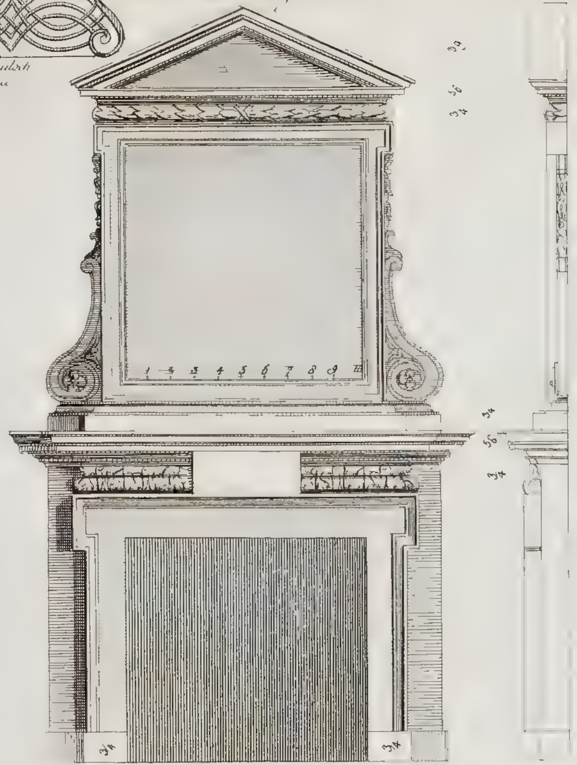


Fret and Guilloch for a Freeze

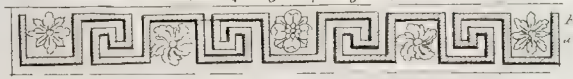


2/9
3/4
1
2
3
4
5
6
1
2
3
2
2
1/4
3/4
6 parts

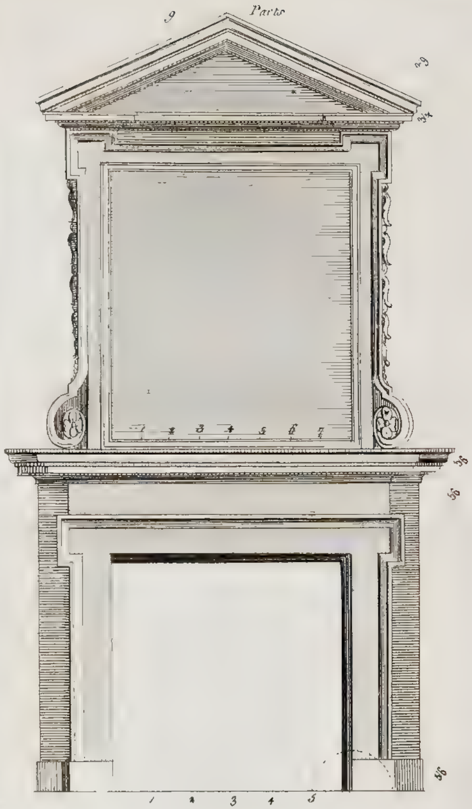
The frame over Chimney is Divided into 7 parts and one is the Moulding but it may be divided into 8 or 10 and Give one to the Moulding the Architrave and frize to Chimney is ·6 part and the Cornices 3/4 of the Architrave



2/9
5/6
3/4
1
2
3
4
5
6
7
8
9
10
3/4
5/6
3/4
3/4
3/4
1
2
3
4
5
6

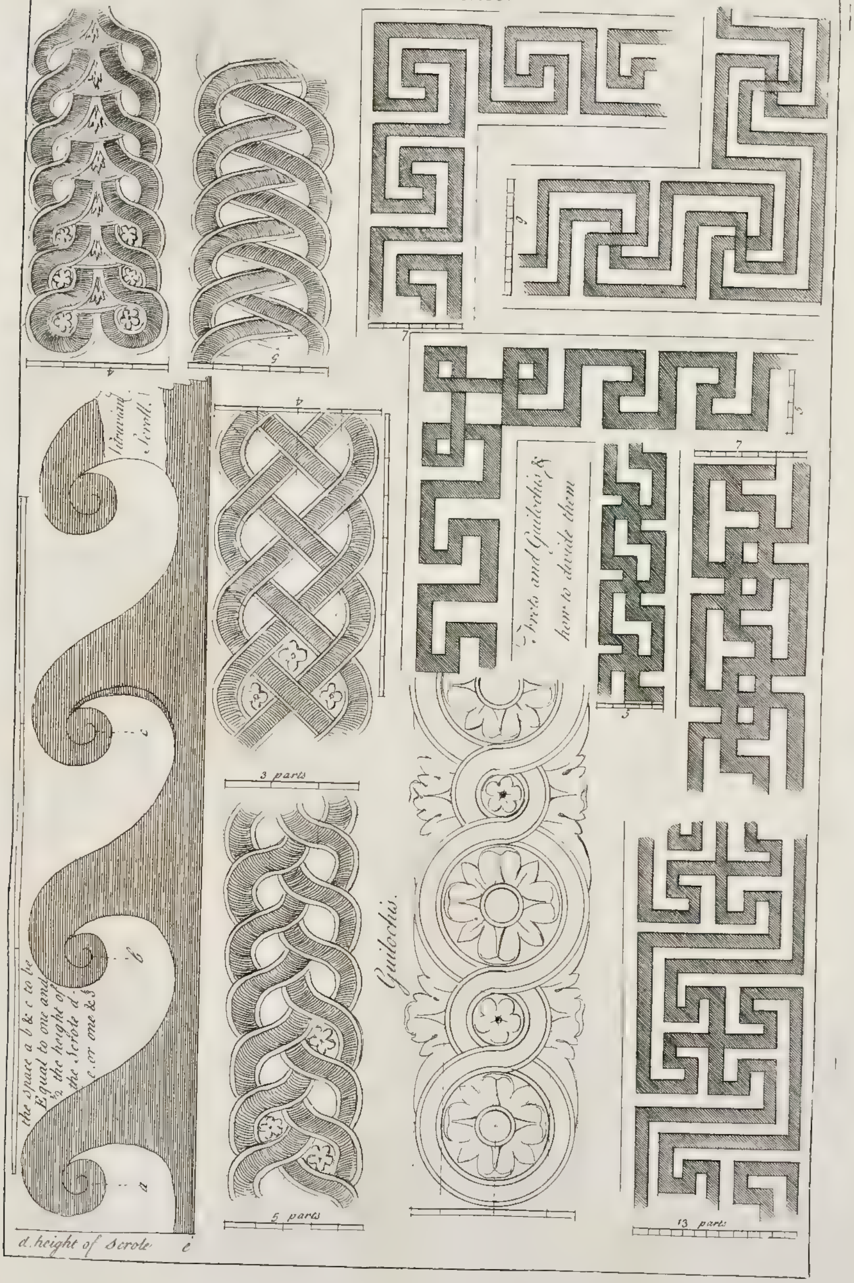


Fret for a Frize

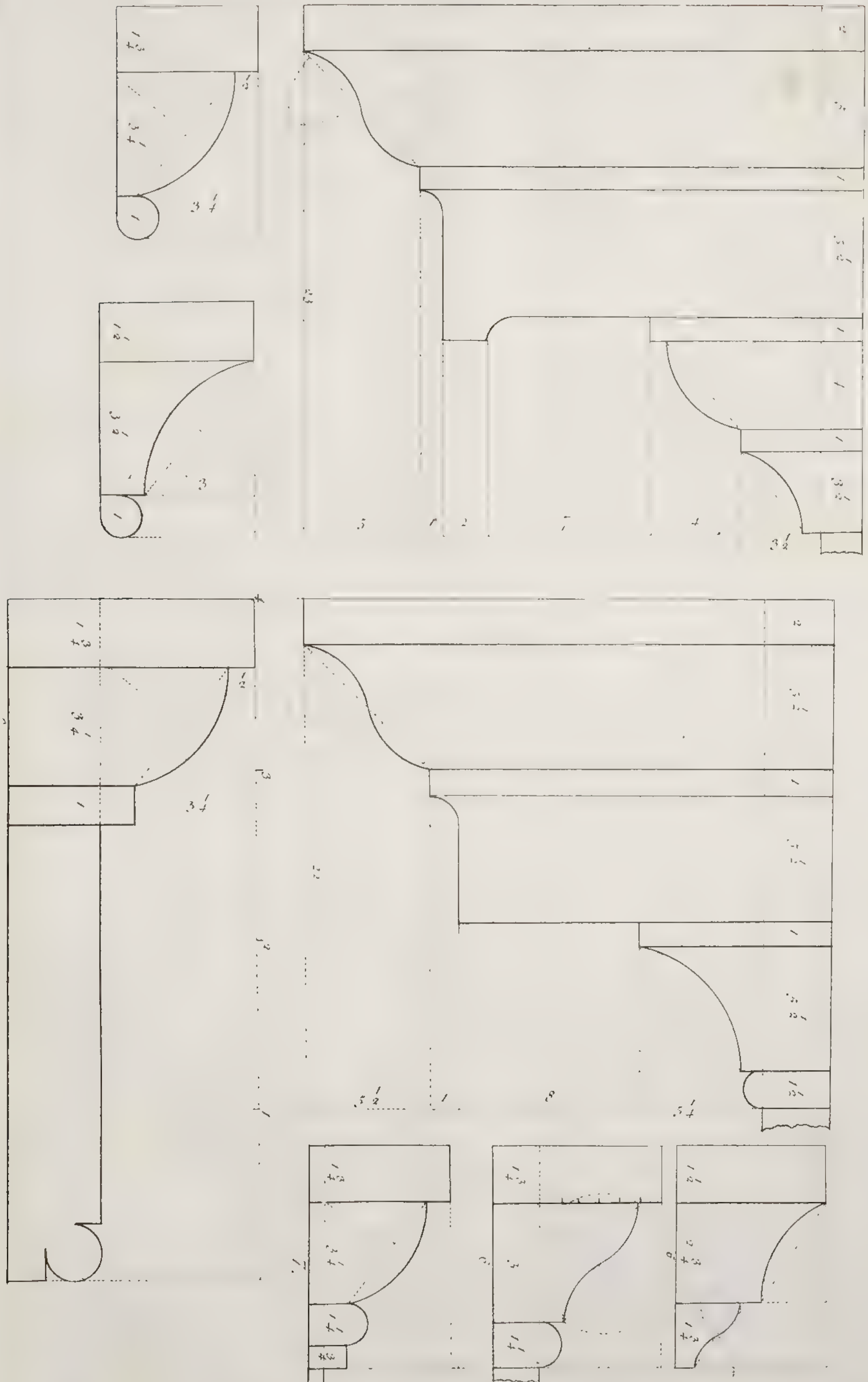


9
Parts
2/9
3/4
1
2
3
4
5
6
7
5/6
5/6
5/6
1
2
3
4
5

Frets & Guiloches.

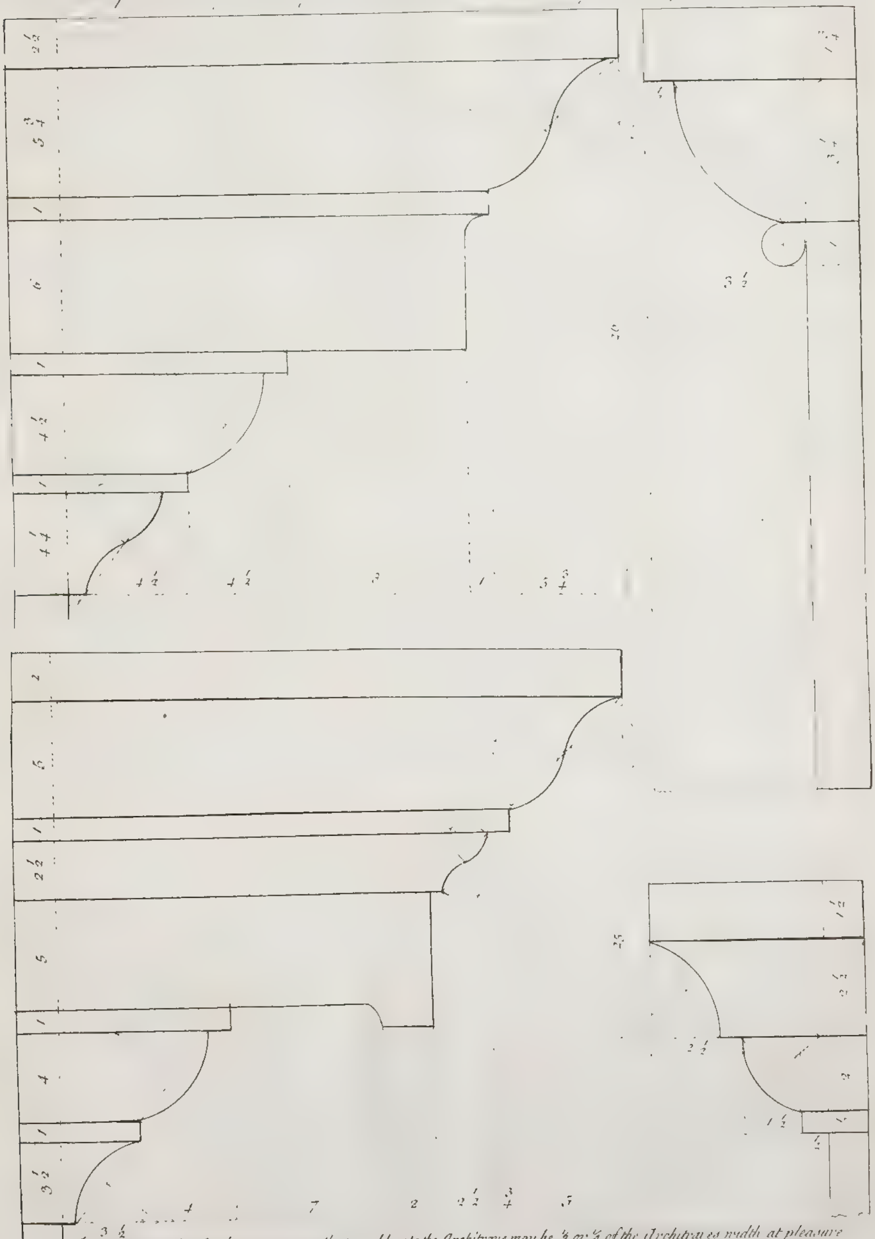

4
5
Vitruvian Scroll.
4
3 parts
5 parts
Guilochis.
the space a b & c to be Equal to one and ½ the height of the Scrole d. e. or one & ½
a
b
c
d. height of Scrole
e
7
9
5
7
5
Frets and Guilochis & how to divide them
13 parts

Cornice & Architrave moldings for Chimney's. —— Page 64.


3 1/4
3
5
1
2
7
4
3 1/2
3 1/4
5 1/2
1
8
5 1/4

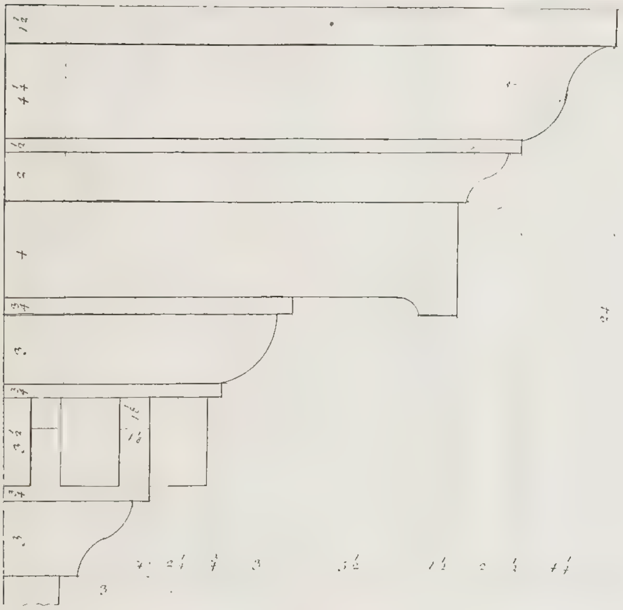
The Cornices may be 5/6 or 3/4 of the Architraves Breadth & divide the Cornices in as many parts as figured & give them parts to the mouldings as they are figured in height and projection in all the mouldings.

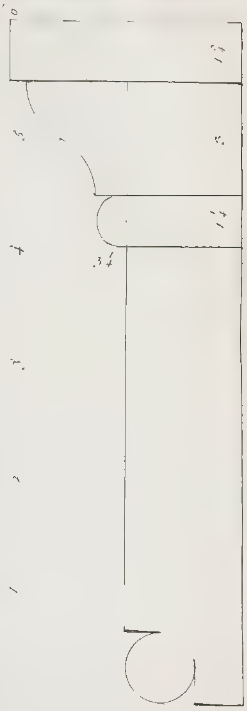
Two Cornices for Chimneys at Large with Architrave Mouldings at Large — Page 65.

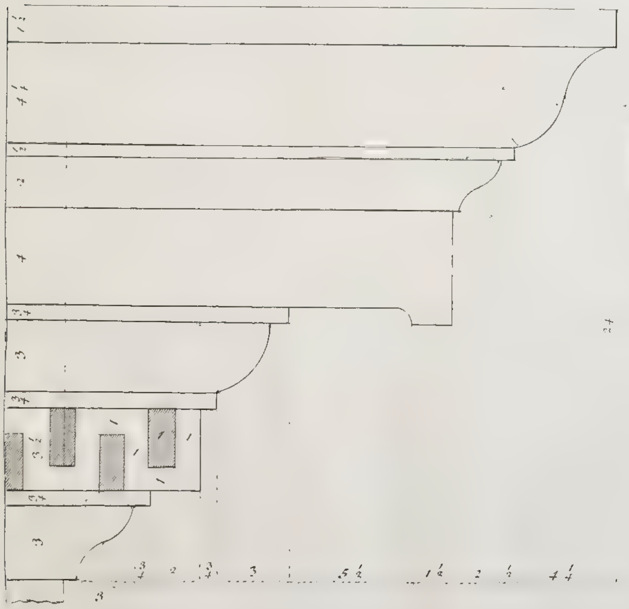

2½
3¾
1
6
1
4½
1
4¼
4½
4½
3
1
3¾
3½
2
5
1
2½
5
1
4
1
3½
3½
4
7
2
2½
¾
5
1½
2½
1½

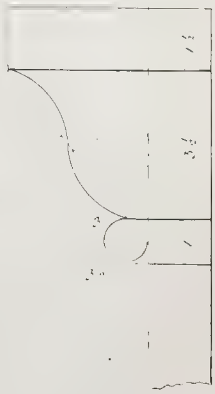
The Ovolo & Bead to Architrave or any other moulding to the Architrave may be ⅓ or ¼ of the Architraves width at pleasure

Two Cornices for Chimneys at large with Architrave Moldings at large. — Page 66.

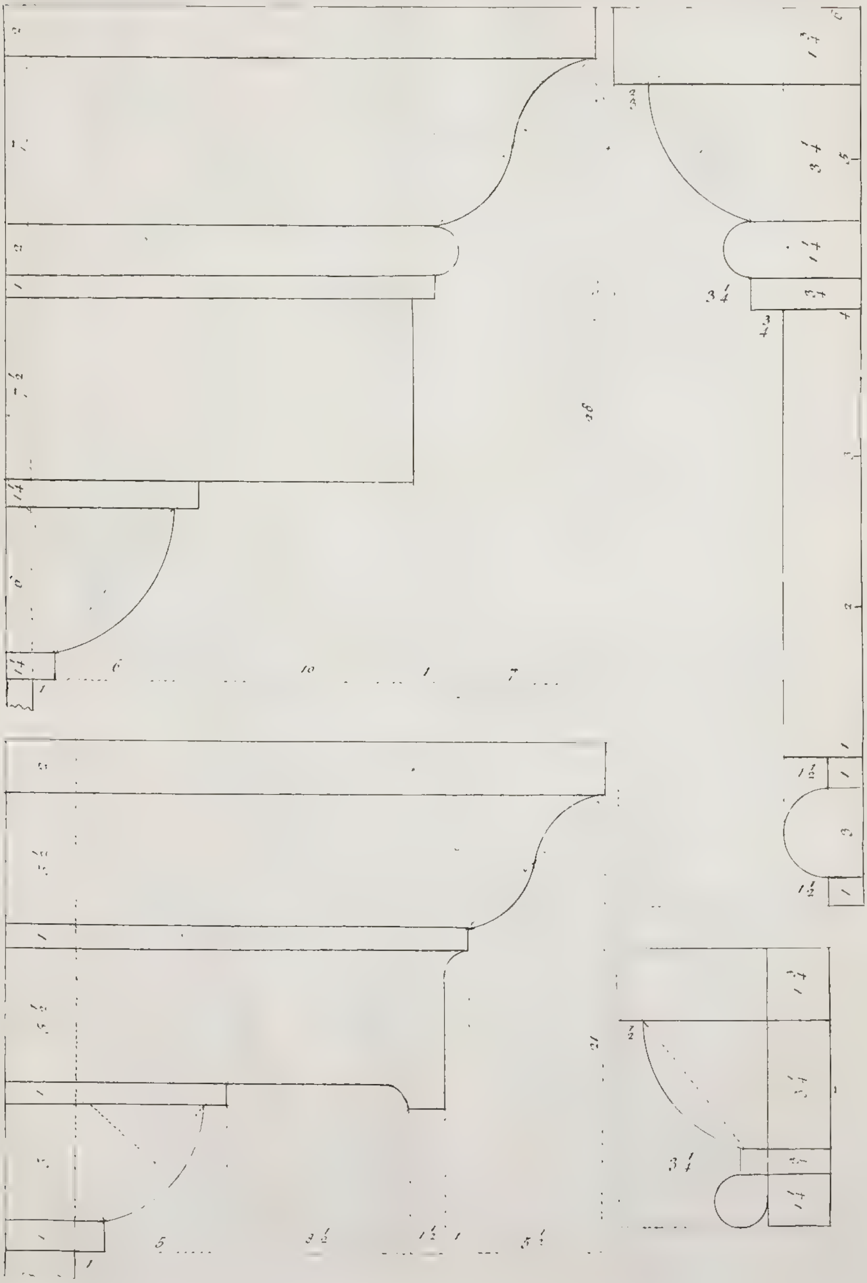

1½
4¼
½
2
4
¾
3
¾
3½
1½
1¼
¾
3
¾ 2¼ ¾ 3 5½ 1½ 2 ½ 4¼
3
24



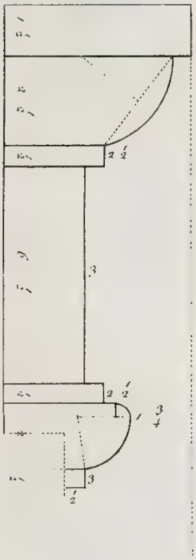

1½
4¼
½
2
4
¾
3
¾
3½
¾
3
¾ 2 ¾ 3 1 5½ 1½ 2 ½ 4¼
3
24

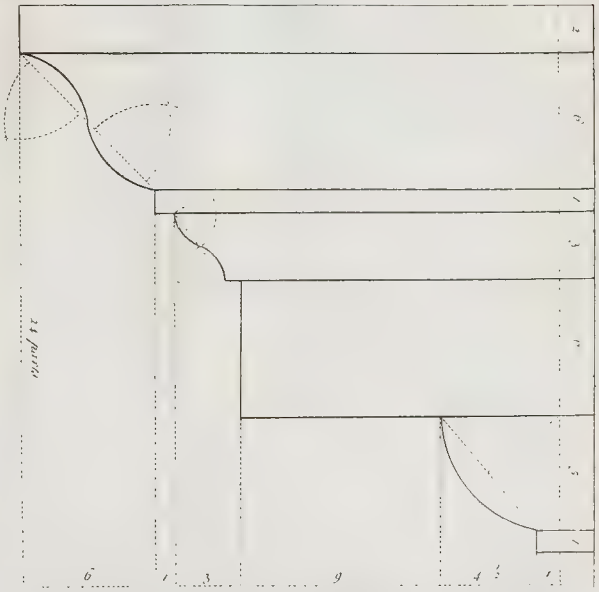


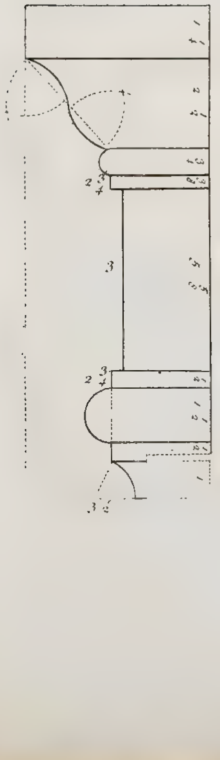
Two Cornices for Chimneys at Large, with Architrave Mouldings at Large. — Page 67

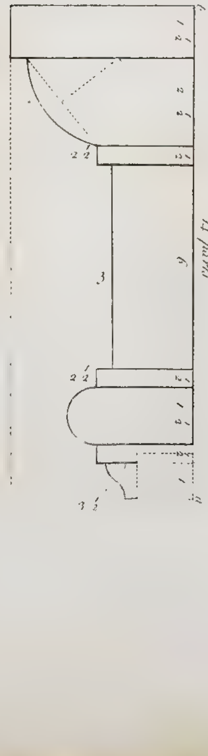

6
10
1
7
3¼
3¼
5
3½
1½
1
5½
3¼
1½
1½
3

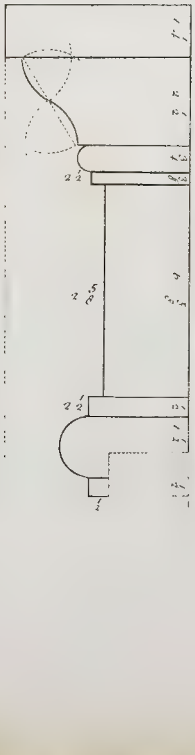
One Cornice at large for Chimneys with Architrave Moldings at large for Frames over Chimneys &c. — Page 68.

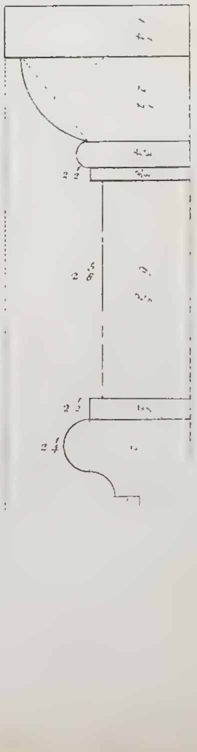

2 1/2
3
2 1/2
3/4
3
1/2

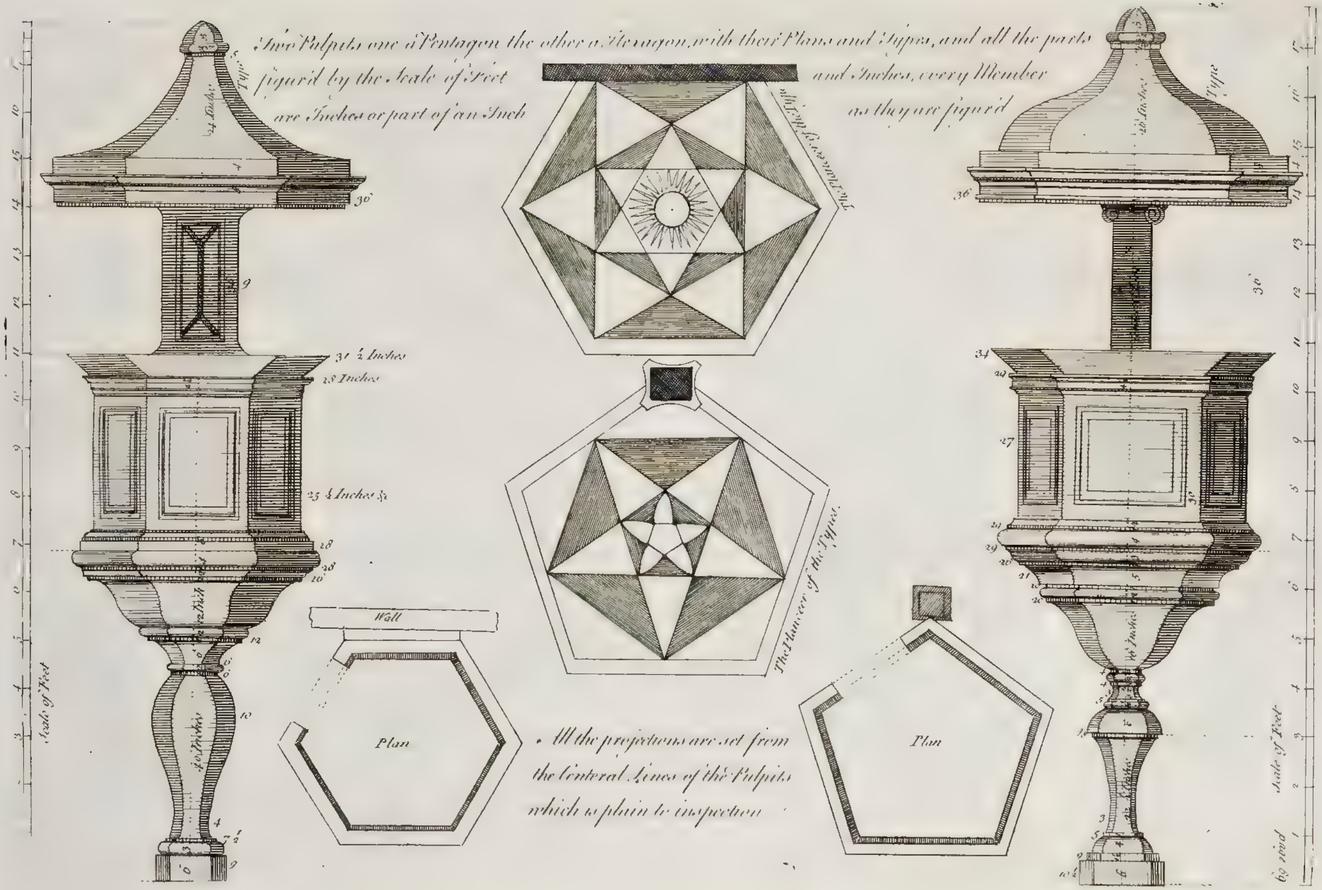

24 parts
6
1
3
9
4 1/2
1


2 3/4
3
2 3/4
3 1/2


2 1/2
3
24 parts
2 1/2
3 1/2


2 1/2
2 5/8
2 1/2
1/2


2 1/2
2 5/8
2 1/2
2 1/4



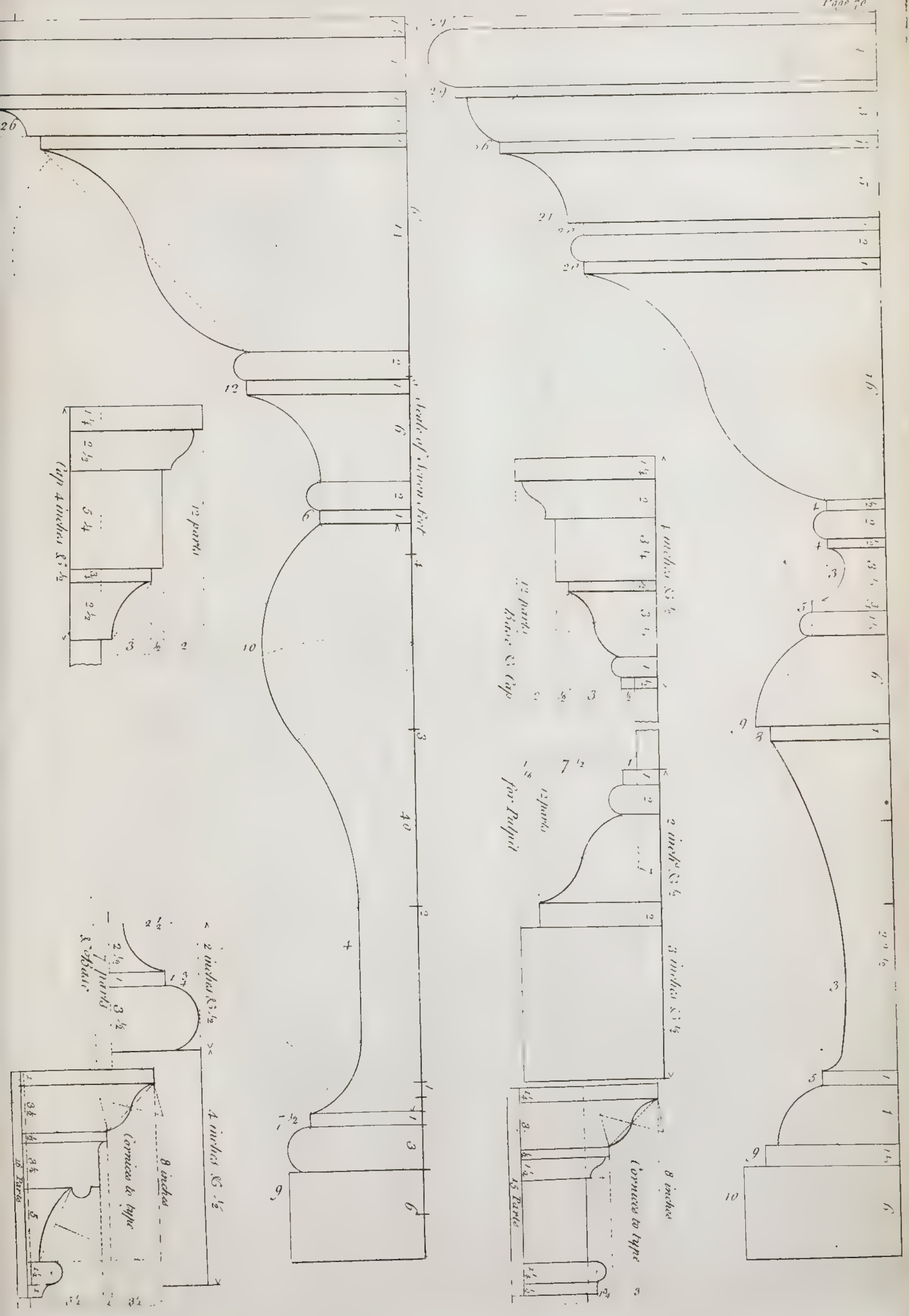
Two Pulpits one a Pentagon the other a Hexagon, with their Plans and Types, and all the parts figur'd by the Scale of Feet and Inches, every Member are Inches or part of an Inch as they are figur'd

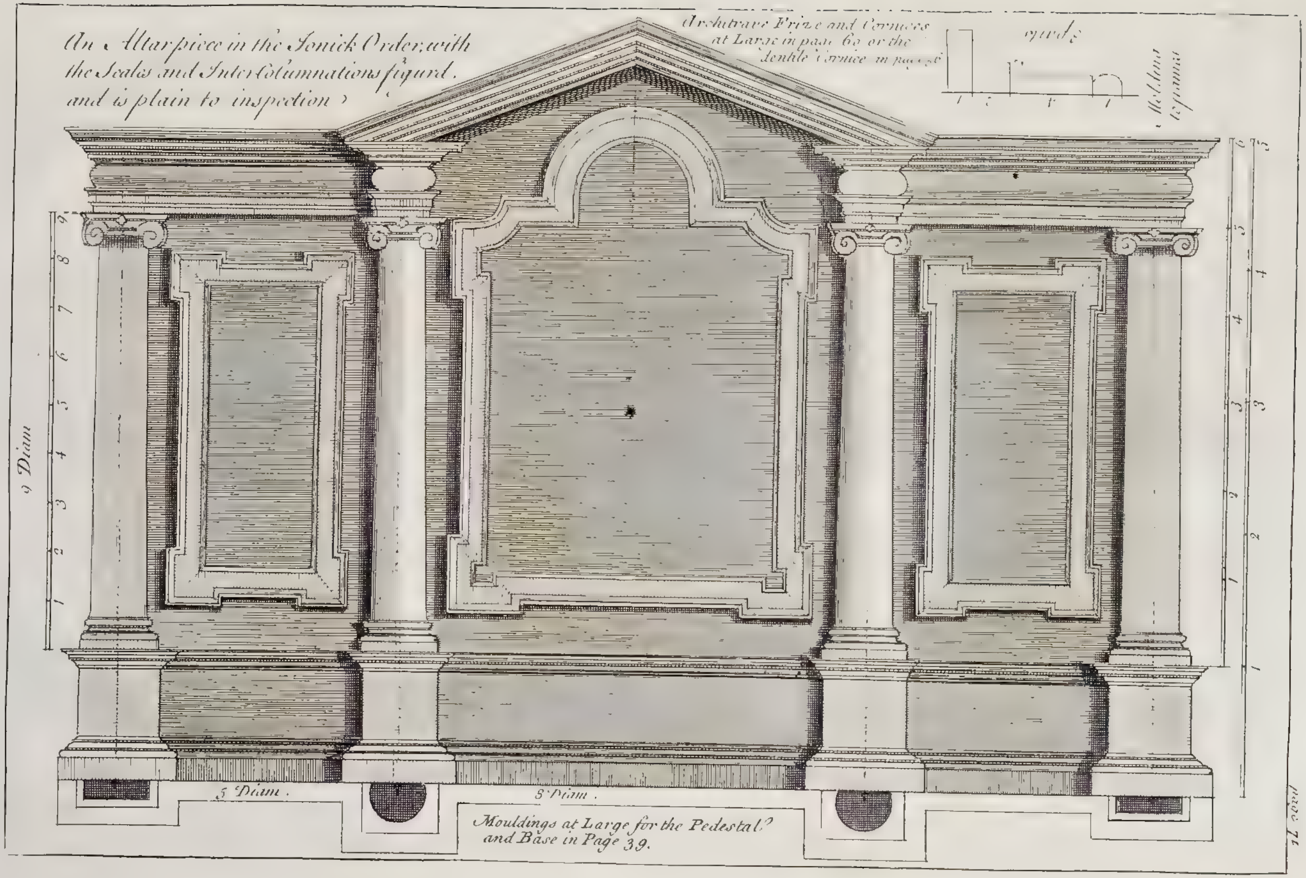
All the projections are set from the Centeral Lines of the Pulpits which is plain to inspection

Type
24 Inches
30
9
31 ½ Inches
28 Inches
25 ¼ Inches
40 Inches
Wall
Plan
The Planceer of the Type
The Planceer of the Types
Plan
Type
26 Inches
36
34
27
30
Scale of Feet

page 69

Half of two Supporters for Pulpits at Large with the Baſe & Cornice for the Body of the Pulpits at Large.


Scale of Seven Feet
Cap 4 inches & ½
12 parts
4 inches & ½
12 parts
Base & Cap
2 inches & ½
3 inches & ½
12 parts
for Pulpit
2 inches & ½
7 parts
Base
4 inches & ½
8 inches
Cornice to type
15 Parts
8 inches
Cornice to type
15 Parts
40
26
12
10
9
6
5
4
3



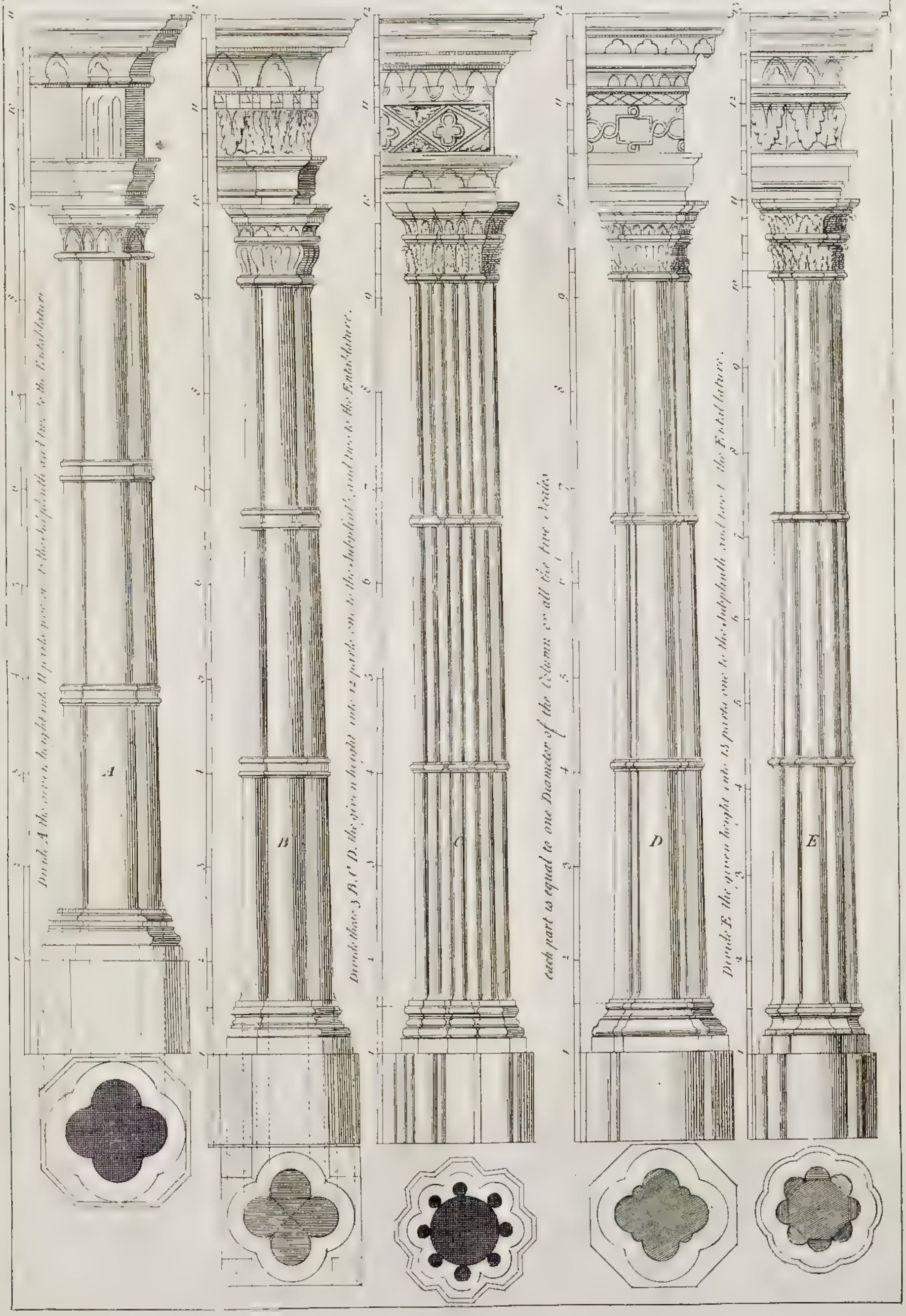
An Altarpiece in the Ionick Order, with the Scales and Intercolumnations figured, and is plain to inspection.

Architrave Frize and Cornices at Large in page 69 or the dentile Cornice in page 56

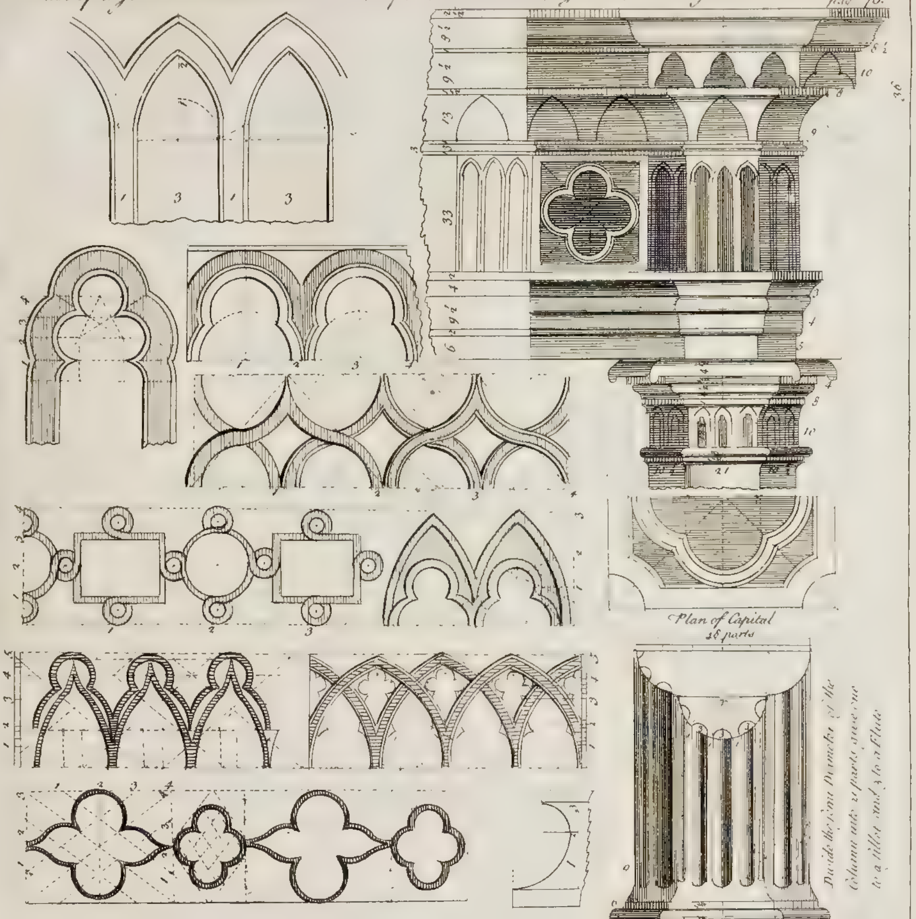
Mouldings at Large for the Pedestal and Base in Page 39.

yards
9 Diam
1
2
3
4
5
6
7
8
9
5 Diam.
8 Diam.
1
2
3
4
5
6

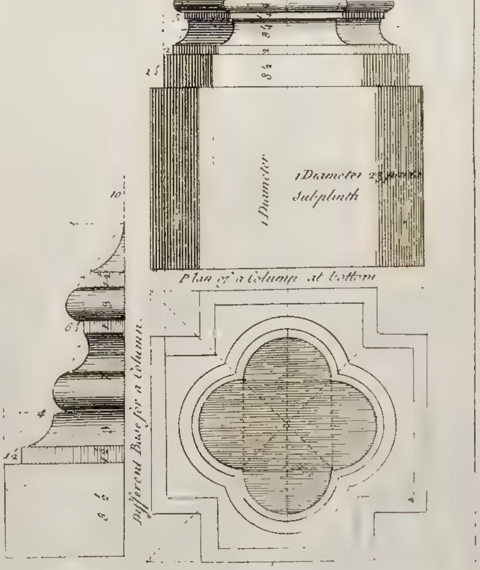
FIVE GOTHIC COLUMNS with their PLANS


Divide A the given height into 11 parts, give one to the Subplinth and two to the Entablature
A
Divide these 3 B. C. D. the given height into 12 parts, one to the Subplinth, and two to the Entablature.
B
C
each part is equal to one Diameter of the Column in all the five Scales
D
Divide E the given height into 13 parts one to the Subplinth and two to the Entablature.
E

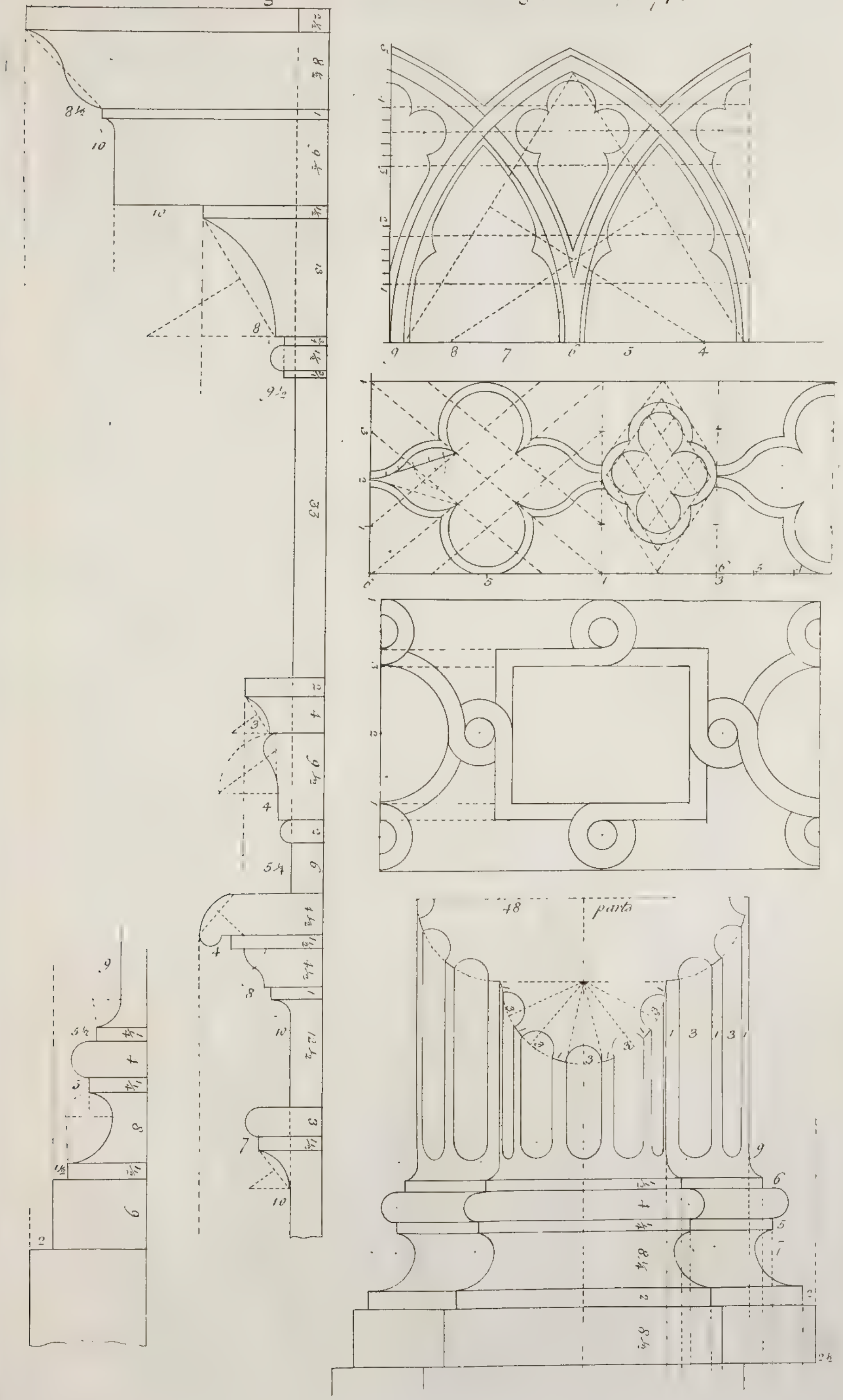
Plan of a Gothic Column with the Base, Cap, and Entablature, & Guilochis in the Gothic manner.


Plan of Capital
48 parts
Divide the semi Diameter of the Column into 21 parts, give one to a fillet and 3 to a Flute
33
10
36

A Gothic Base Cap and Entablature for a Column with a Plan of the Column at the bottom, and Semi Plan of the Cap, with all the Members figur'd by a Scale on the Diameter of the Column. Divide the Diameter into 48 parts or into Six, and one in Eight is the same, and dispose them parts to each Member as they are figur'd in height and projection. The other Ornaments are for Lights, Frizes, Bead Molds, or the neck of Caps, the parts & Centers are plain to inspection.

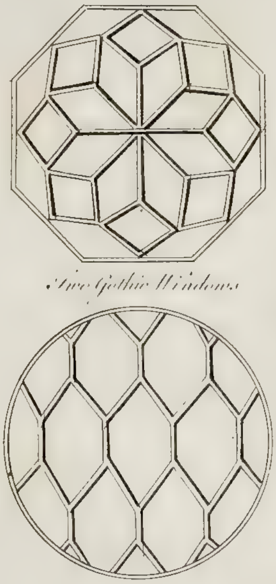

1 Diameter
1 Diameter 28 parts
Subplinth
Plan of a Column at bottom
Different Base for a Column.

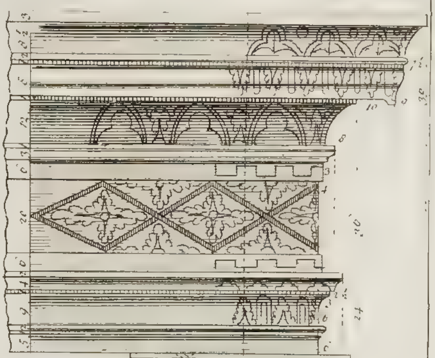
Gothick Moldings and Entablature at Large. — *Page 74.* —



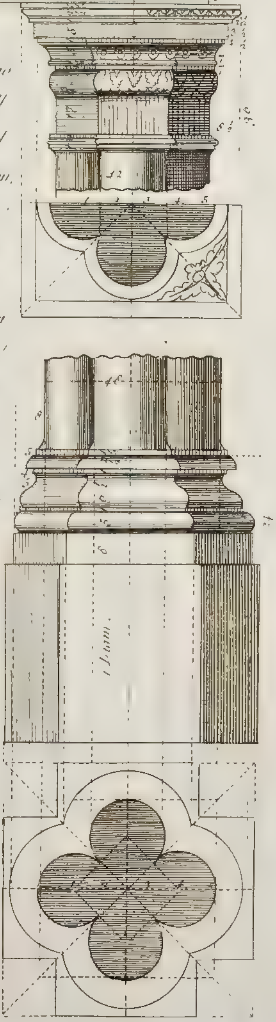
8½
10
10
8
9½
33
4
5½
4
8
10
7
10
9
8
7
6
5
4
48
parts
9
6
5

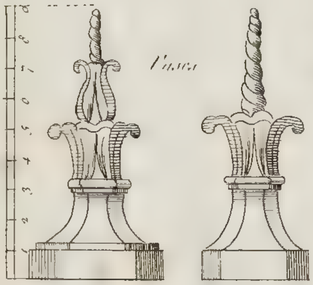
A Plan of a Gothic Column, with the Base, Cap, and Entablature. page 75.

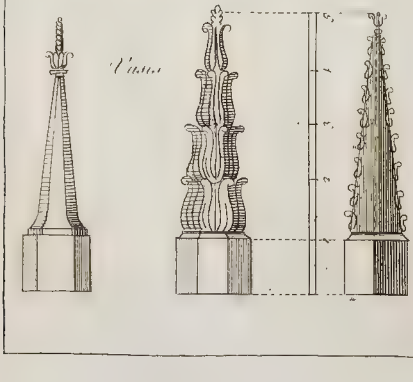

Two Gothic Windows



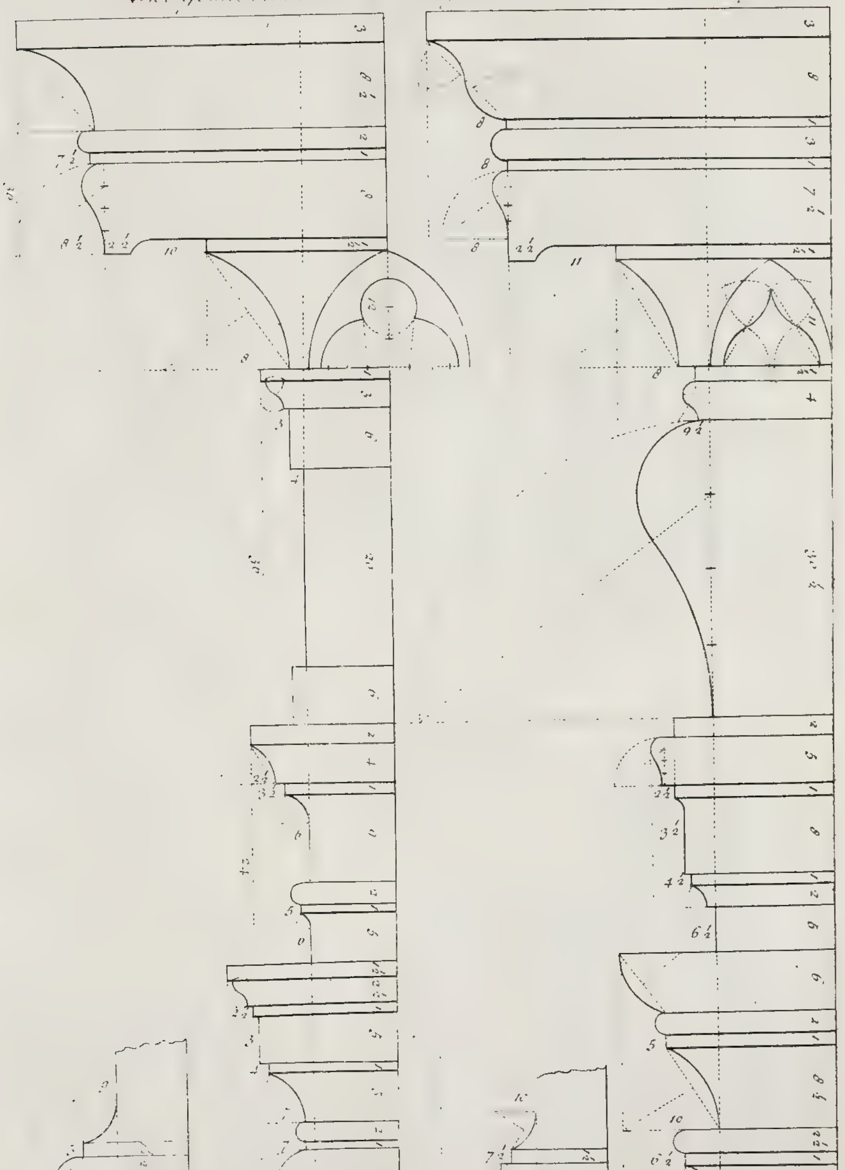
The Base, Cap, and Entablature, with all the Members figur'd in height & projection, by a Scale made on the Diameter of the Column at bottom. Divide the Diameter into 48 parts, and dispose them parts to each Member as they are figur'd in height & projection.




Vases

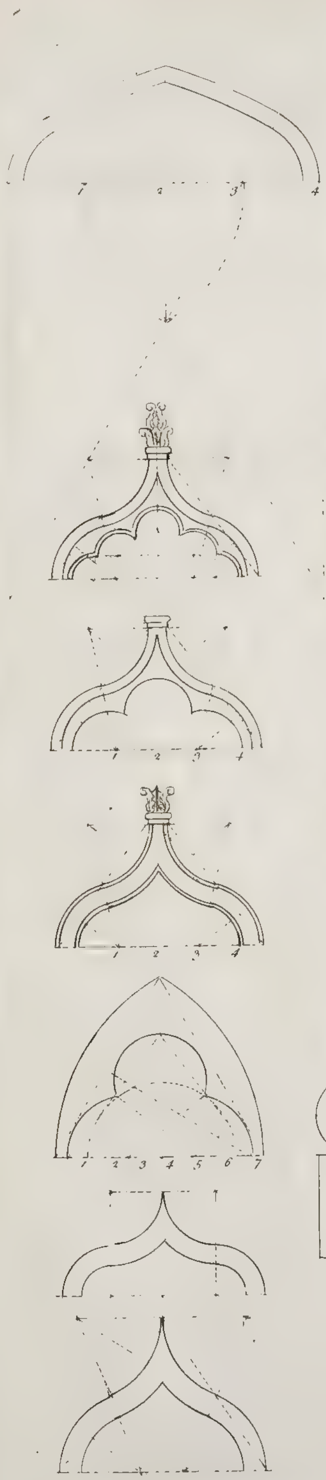

Vases

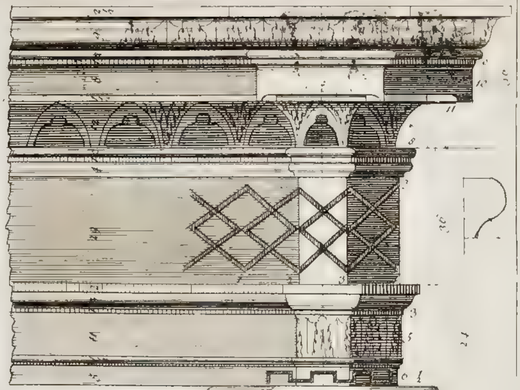
Two Gothic Entablatures at large ——— Page 76.



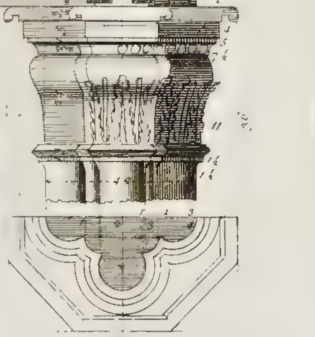
3
8½
2½
10
8½
7½
3
8
1
3
7½
2½
11
4
9½
5
8
3½
4½
6½
6
8½
10
6½
15
10
8
5

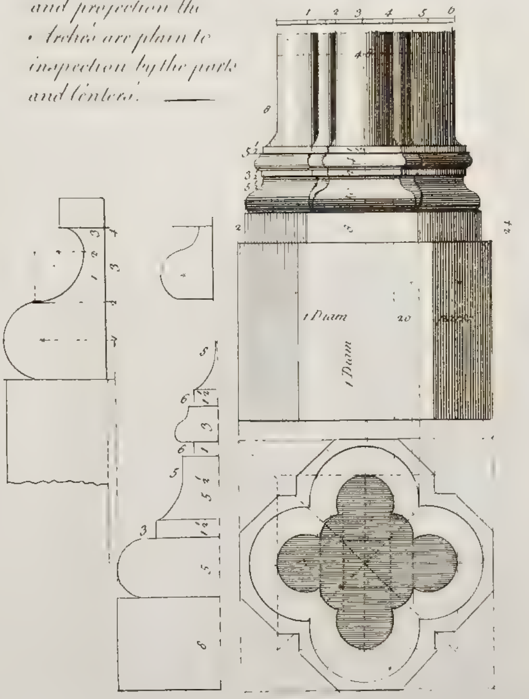
The Plan of a Gothic Column, with the Base, Cap, and Entablature & Seven Gothic Arches.


7
2
3
4
1
2
3
4
1
2
3
4
1
2
3
4
5
6
7

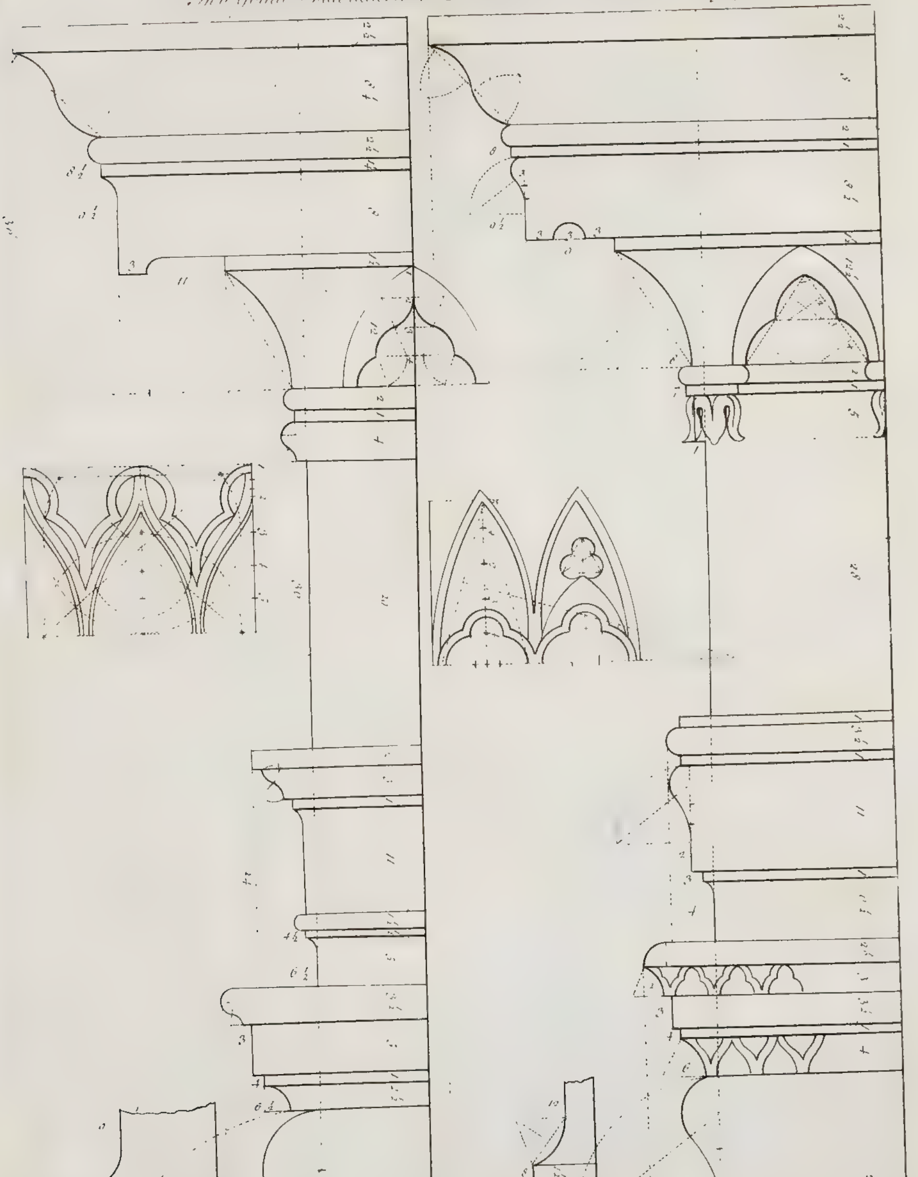


The Plan Sub-plinth Base Capital & Entablature of a Gothic Column with all the Members figur'd in height and projection by a Scale made on the Diameter of the Column at bottom, divide the Diameter into 48 parts and dispose them parts to each Member as they are figur'd in height and projection the Arches are plain to inspection by the parts and Centers.



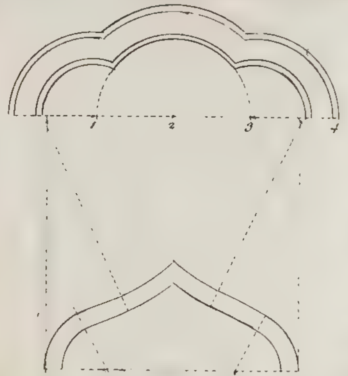

1
2
3
4
5
6
8
24
1 Diam
1 Diam
20
5
6
3
8

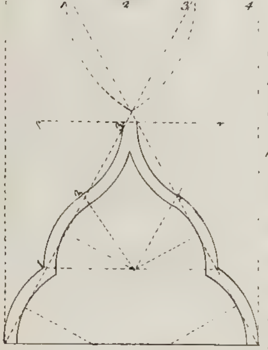
Two Gothic Entablatures at Luca. Pag. 78.

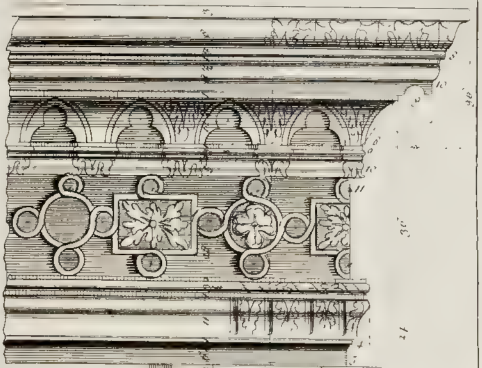


8½
6½
3
11
28
22
4½
6½
6¼
10
8

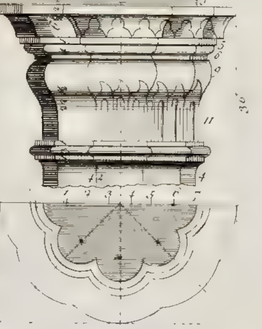
A Plan of a Gothic Column with its Base, Cap, and Entablature at Large — page 79

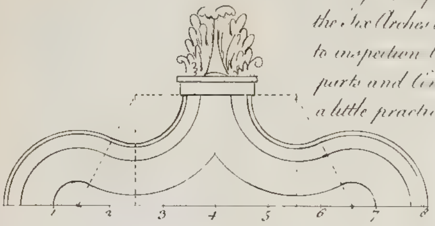


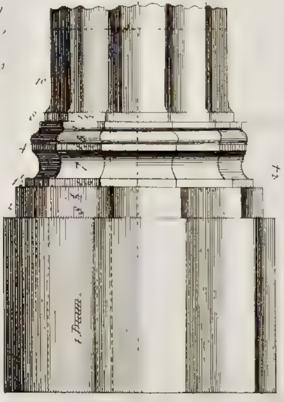


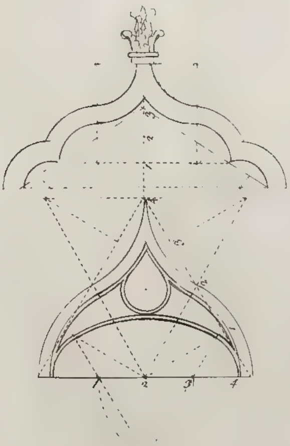


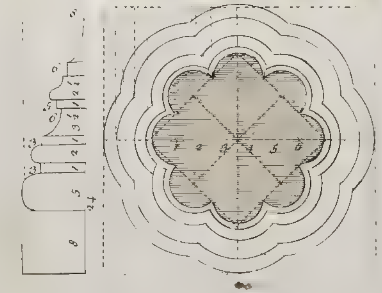
A Plan of a Gothic Column with ye Subplinth Base Cap & Entablature and all the Members are figur'd by a Scale made on the Diameter of the Column at bottom, divide the Column into 48 parts, and dispose them parts to each Member as they are figur'd in height and projection the Six Arches are plain to inspection by the parts and Centers and a little practice.





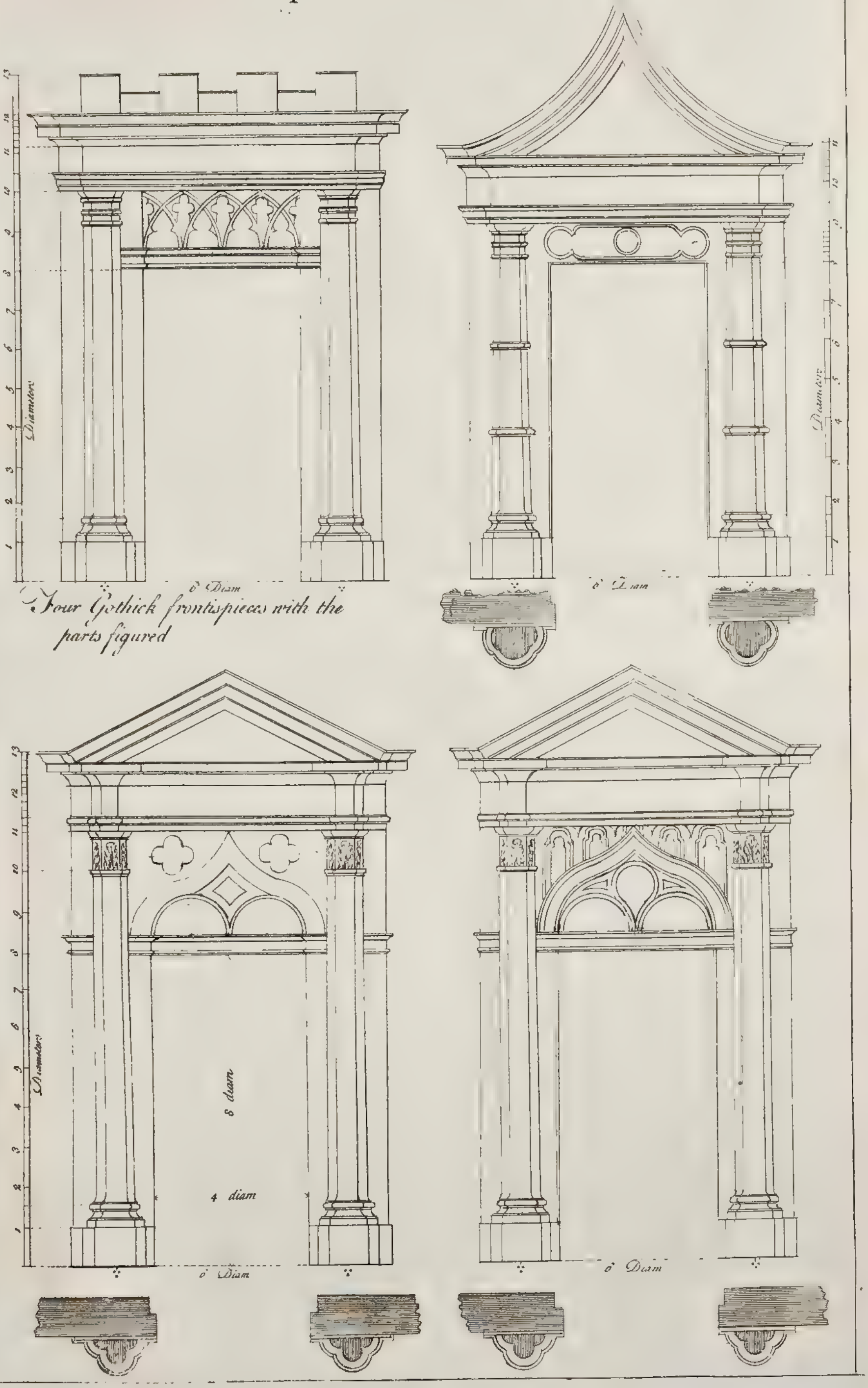






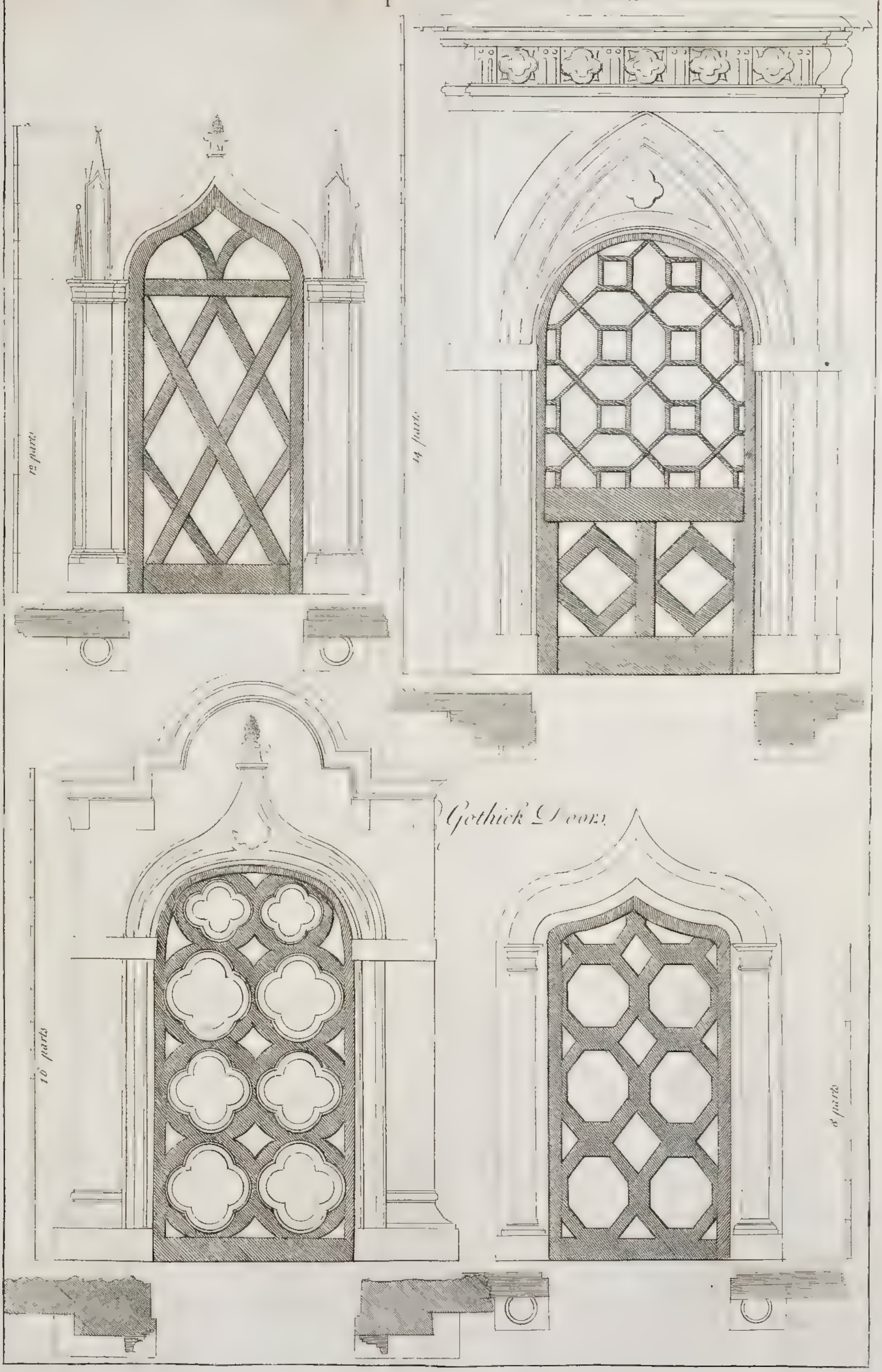
5
3
3
5
8
24
1
2
3
4
5
6

Four Gothick Frontiſpieces for outſide Work.

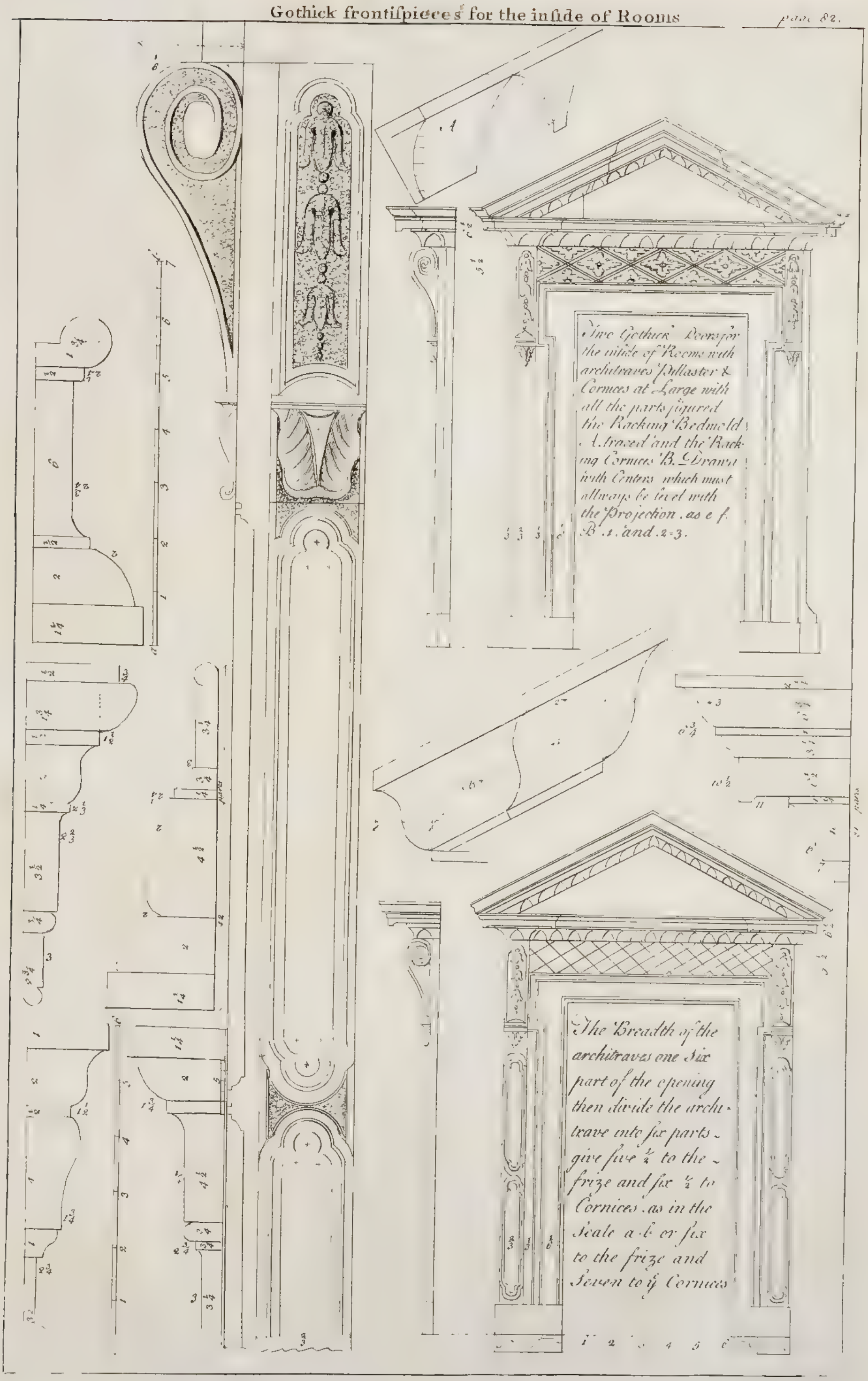

Diameter
1
2
3
4
5
6
7
8
9
10
11
12
13
6 Diam
6 Diam
Diameter
8 diam
4 diam
6 Diam
6 Diam

Four Gothick frontispieces with the parts figured

Gothick frontiſpieces for outſide Fronts.

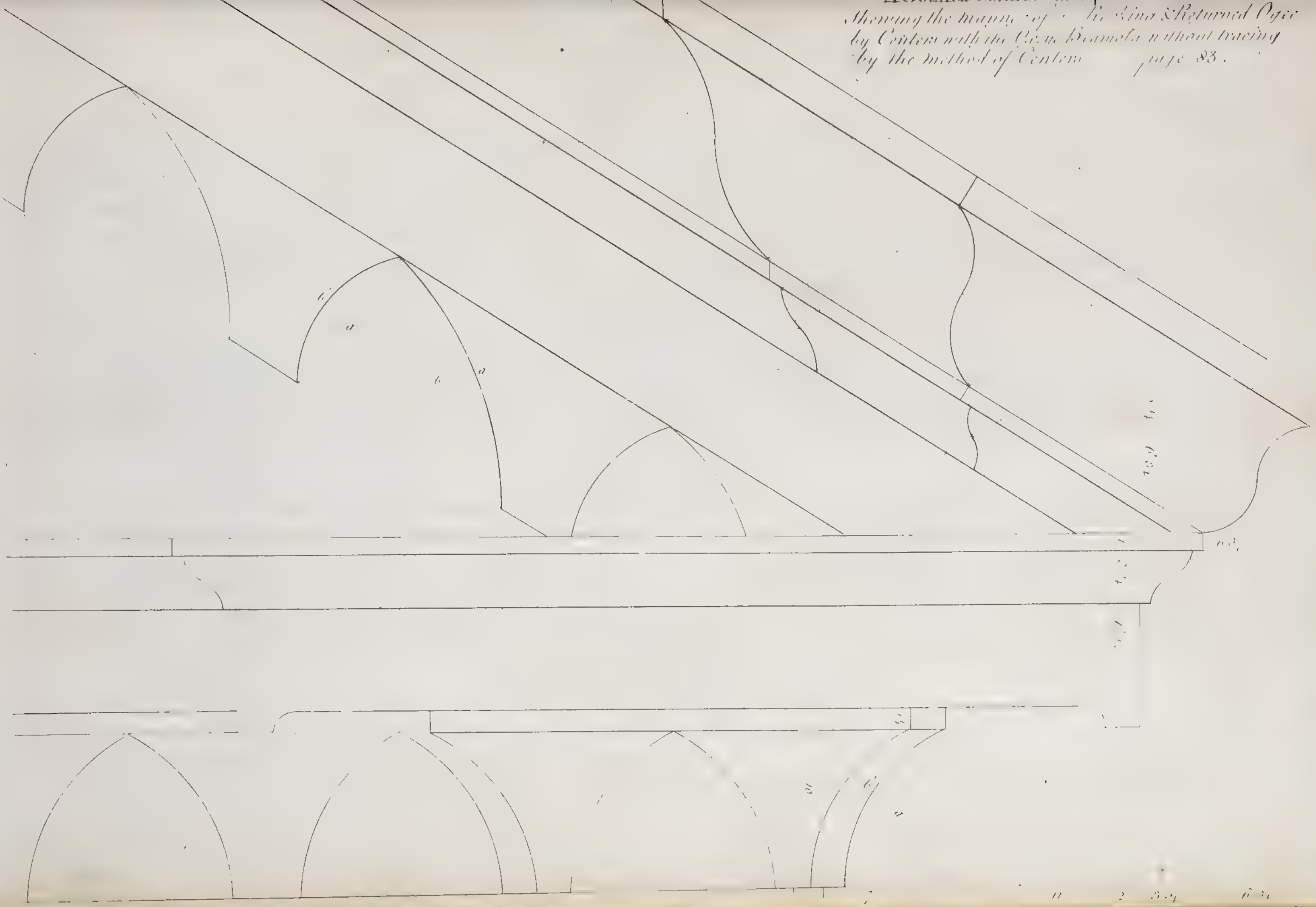

12 parts
14 parts
Gothick Doors.
16 parts
8 parts

Gothick frontiſpieces for the inſide of Rooms



Two Gothick Doors for the inſide of Rooms with architraves Pillaster & Cornices at Large with all the parts figured the Racking Bedmold A. traced and the Racking Cornices B. Drawn with Centers which must allways be level with the Projection. as e f. B. 1. and 2-3.

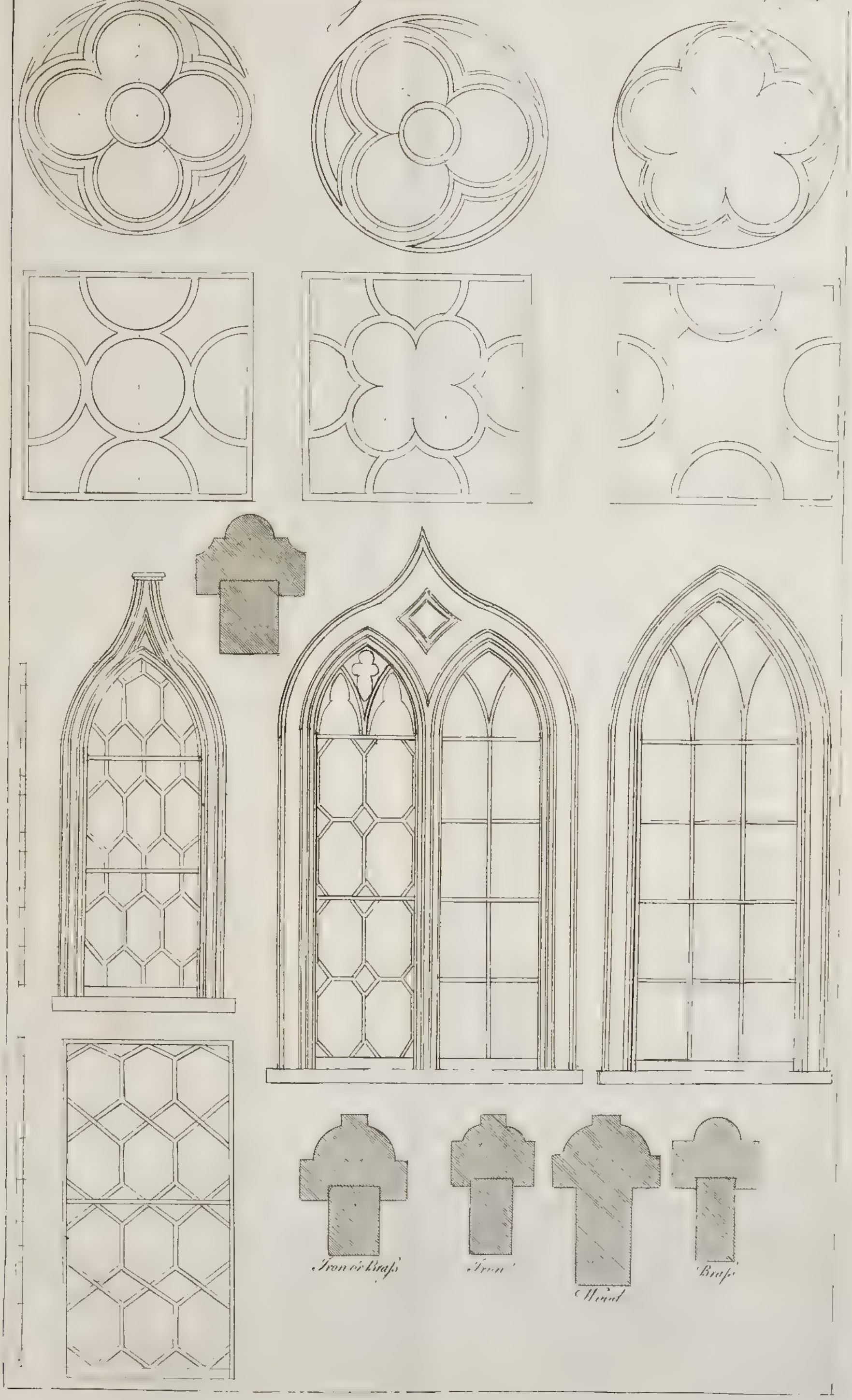
The Breadth of the architraves one Six part of the opening then divide the architrave into ſix parts give five ½ to the frize and ſix ½ to Cornices. as in the Scale a·b or ſix to the frize and Seven to ye Cornices

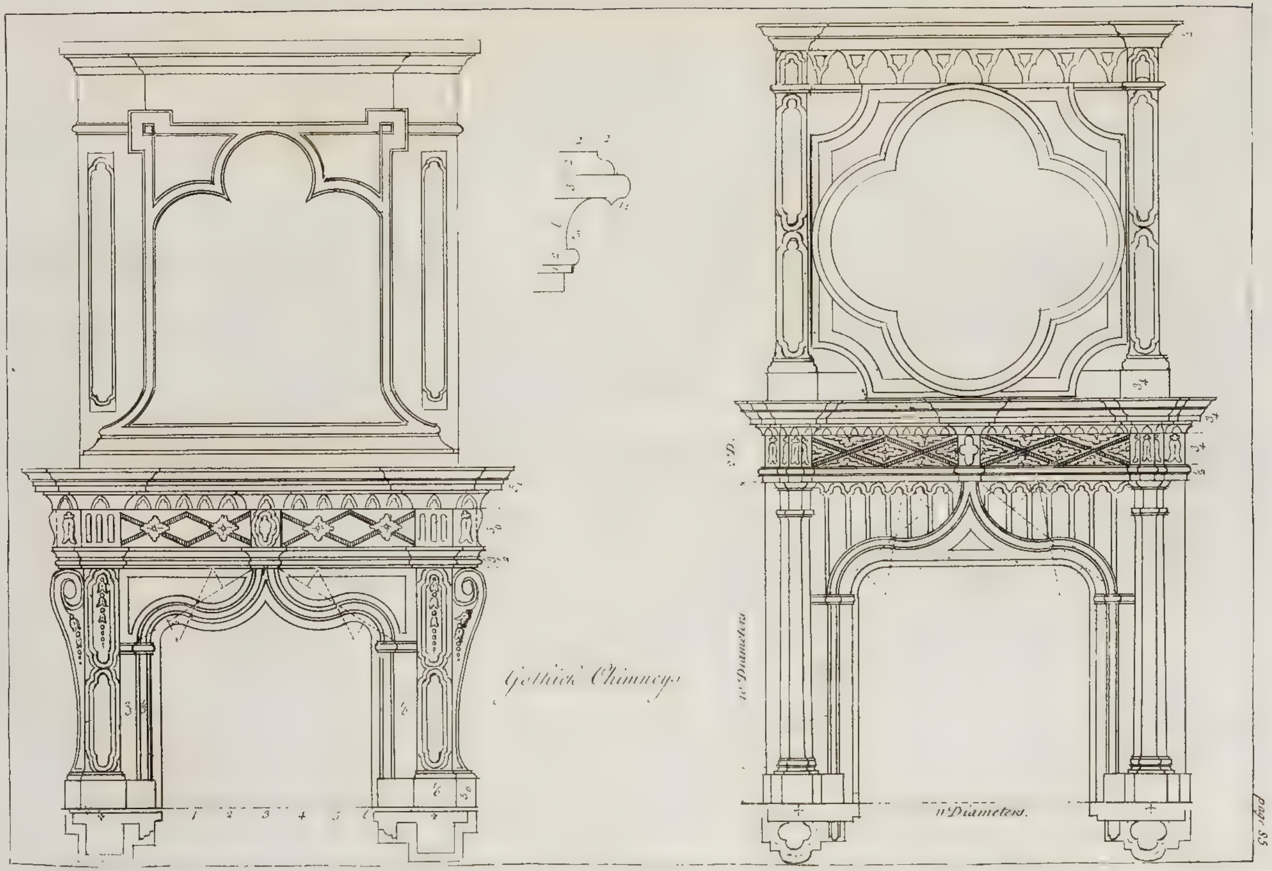


Shewing the manner of the Zina & Returned Ogee
by Centers with the Ogee Brackets without tracing
by the method of Centers page 83.

Gothic Windows.

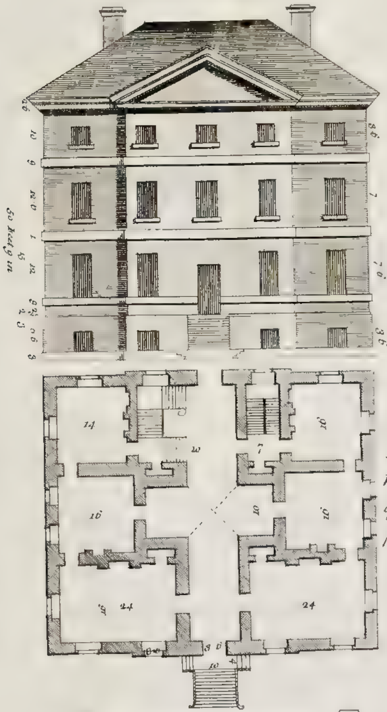
page 84


Iron or Brass
Iron
Wood
Brass

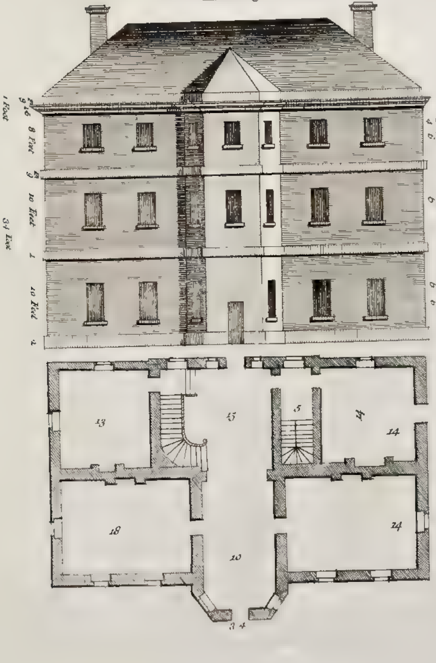

2 D.
10 Diameters
11 Diameters.
1
2
3
4
5
6

Gothick Chimneys

Two Designs. Plan & Elevations of Gentlemens House.
Capable of being Enlarg'd or Diminish'd at Pleasure.


50 Feet 9 in
26
10
9
12 0
1
15
12
9 2½
2 3
0 6
3
3 6
7
7 0
3 6
14
16
w
7
10
16
10
24
24
3 6
10

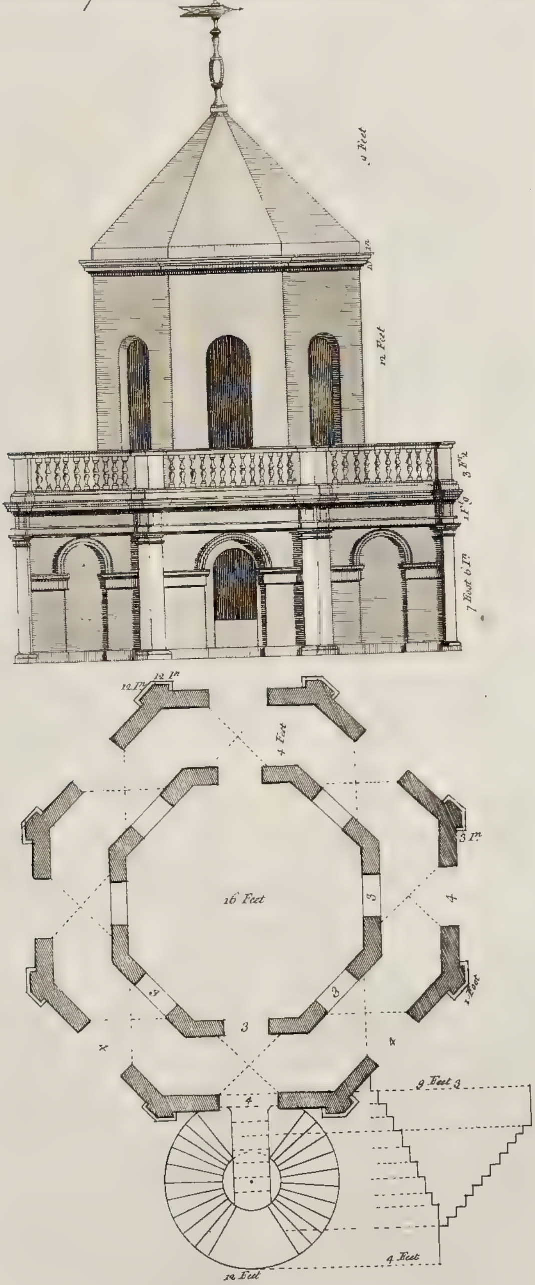
To prepare foundations [illegible] Walls and find the proportion of Windows, Chimneys &c. [illegible] front page 1. to 5


1 Foot
9 16
8 Feet
9
10 Feet
34 Feet
1
10 Feet
2
Ft In
4 6
Ft
6
Ft In
6 6
13
15
5
4
14
18
10
14
3 4

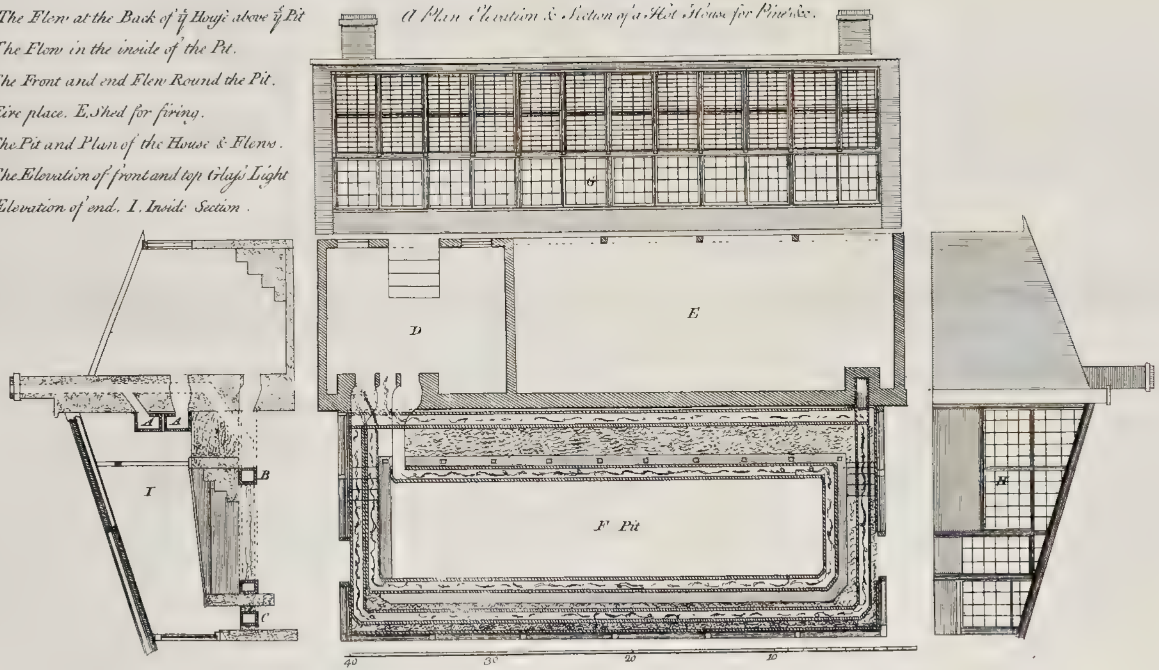
Page 87.

An Octagon Temple with Tuscan Pillasters Ballustrade &c.

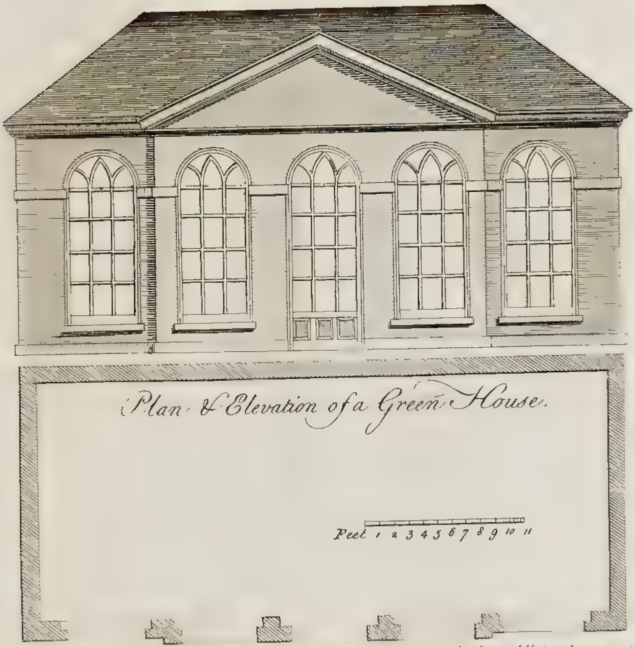
The Mouldings, Base Cap & Entablature for this Building are at Large, Page 59.


9 Feet
12 Feet
3 Ft 2
1 F 9
7 Feet 6 In
12 In
12 In
4 Feet
3 In
16 Feet
3
4
1 Feet
3
3
3
4
4
4
9 Feet 3
4 Feet
12 Feet

For ye Iron Rail and Bannister to the Steps. See page 26.

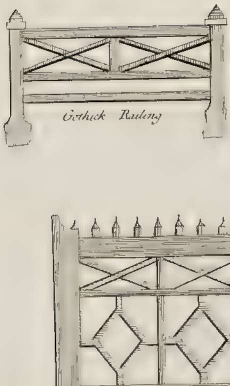

A Plan Elevation & Section of a Hot House for Pine &c.
G
D
E
F Pit
H
I
A
A
B
C
40
30
20
10

A . The Flew at the Back of ye Houſe above ye Pit
B . The Flew in the inside of the Pit .
C . The Front and end Flew Round the Pit .
D . Eire place. E. Shed for firing .
F . The Pit and Plan of the House & Flews .
G . The Elevation of front and top Glaſs Light
H . Elevation of end . I . Inside Section .

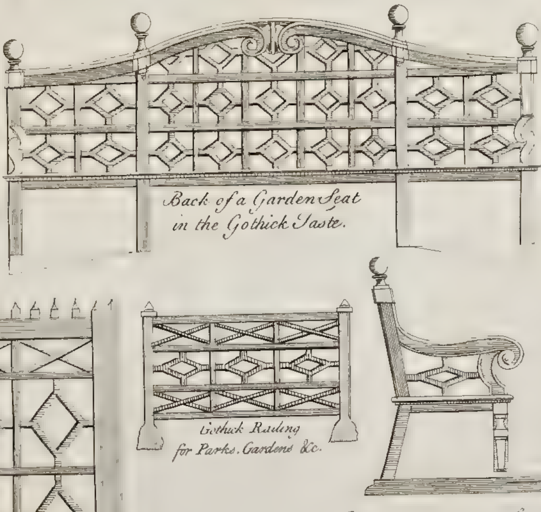


Plan & Elevation of a Green House.

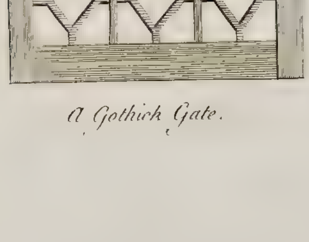
NB The front Lights to ye Green House may be all made as Doors as that in the middle to take away at pleaſure



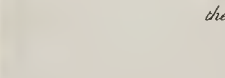
Gothick Railing



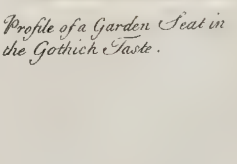
Back of a Garden Seat in the Gothick Taste.



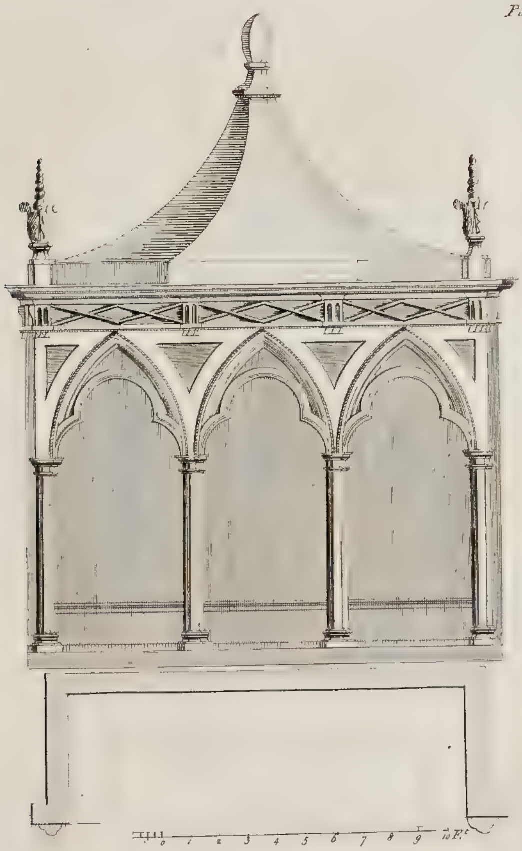
A Gothick Gate.



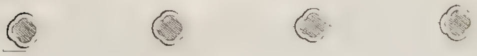
Gothick Railing for Parks, Gardens &c.

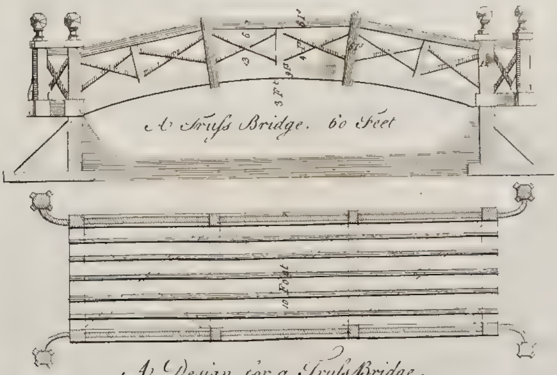


Profile of a Garden Seat in the Gothick Taste.


0
1
2
3
4
5
6
7
8
9
10 Ft.

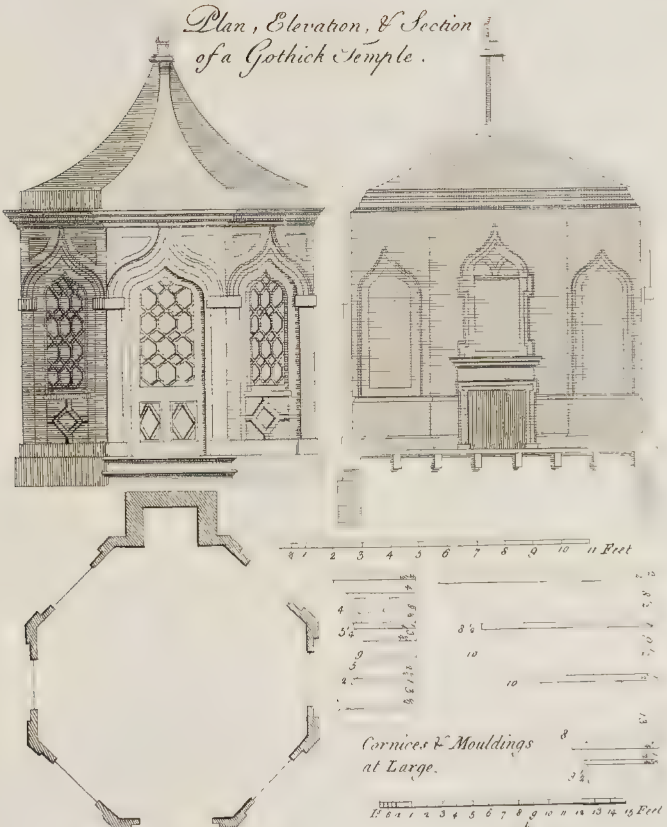
Plan & Elevation of a Gothick
Garden Seat.

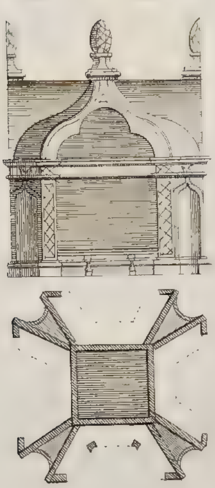



3 Ft.
A Truſs Bridge. 60 Feet
10 Foot

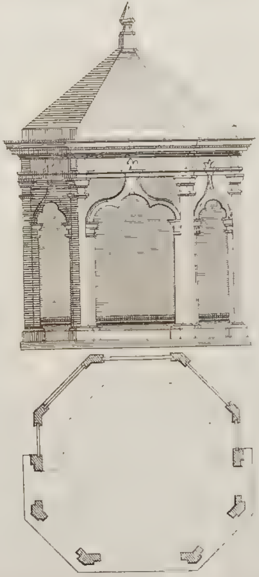
A Design for a Truſs Bridge.

Plan, Elevation, & Section of a Gothick Temple.


1 2 3 4 5 6 7 8 9 10 11 Feet
Cornices & Mouldings at Large.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Feet

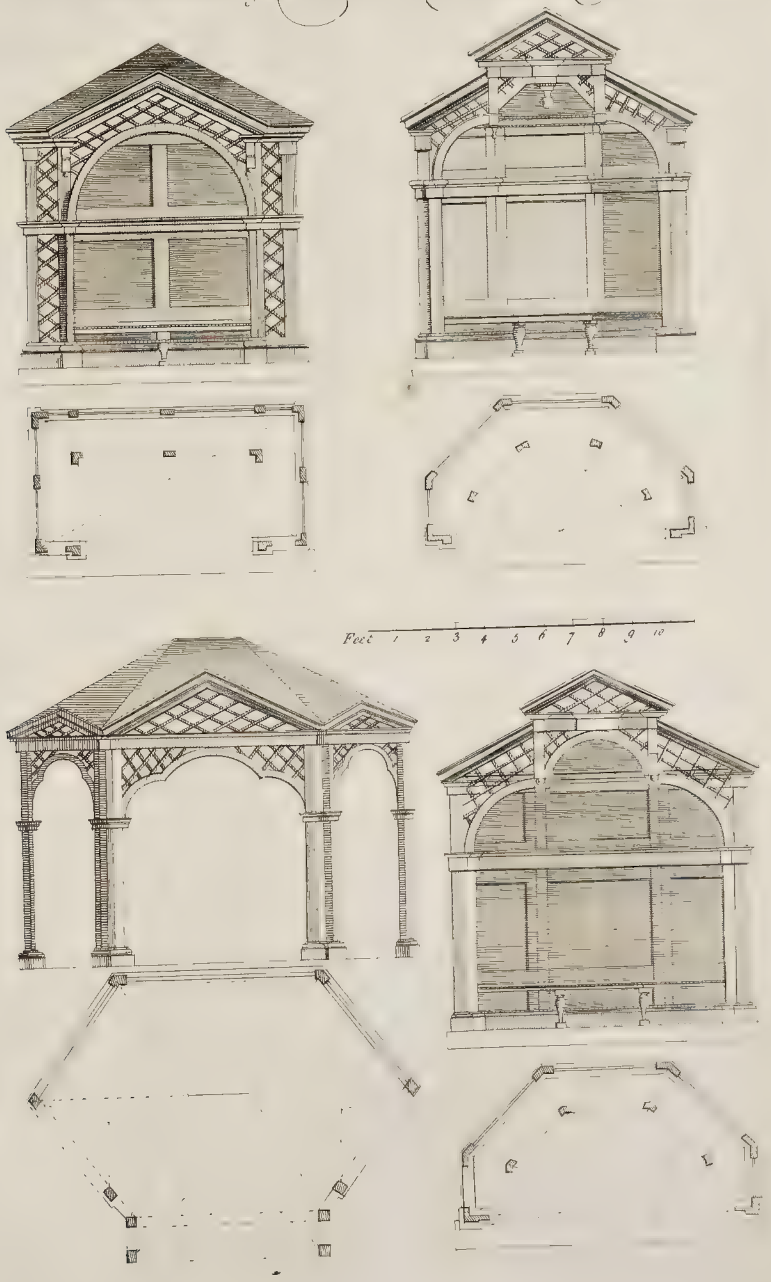
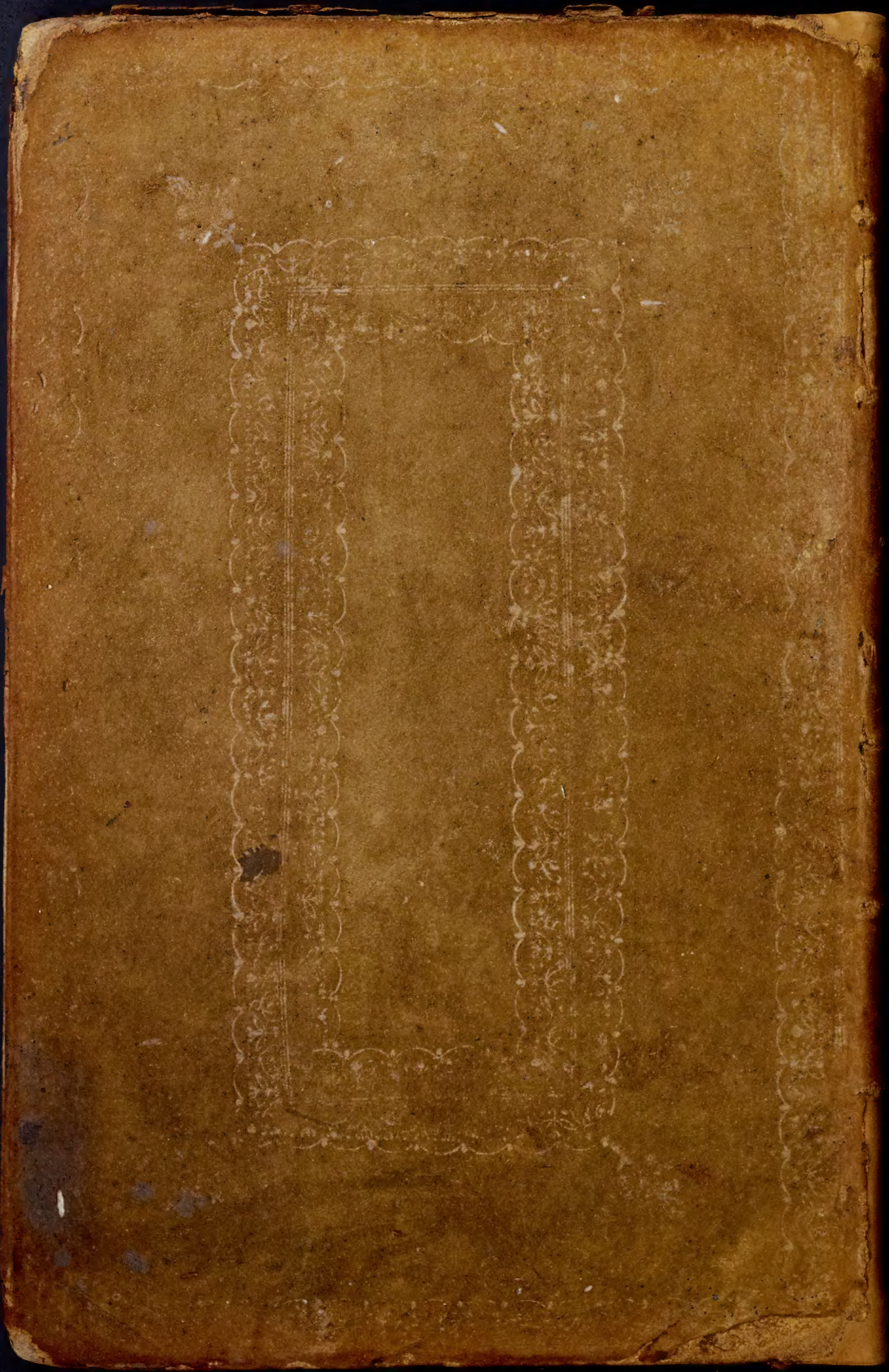


Plan & Elevation of a Gothick Seat, fronting four ways with Neiches.



Plan & Elevation of a Gothick Seat.

Four Plans & Elevations of Venetian Seats for Park's Gardens &c.


Feet 1 2 3 4 5 6 7 8 9 10